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THE DUBLIN
QUARTERLY JOURNAL
OF
MEDICAL SCIENCE;

CONSISTING OF
ORIGINAL COMMUNICATIONS,
REVIEWS, RETROSPECTS, AND REPORTS,
INCLUDING THE
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PART I.
ORIGINAL COMMUNICATIONS.

ART. I.—*Clinical Researches on Gangrene of the Lung.* By
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UNDER the term gangrene may be included all cases in which a putrefactive process, accompanied by death of a portion of the lung, takes place. The disease is met with in the acute and chronic forms, and also in that of continually recurring acute attacks: it may be a primary idiopathic affection, or arise in the course of some constitutional disease, or be the result of a previous acute or chronic disease within the chest. Under whatever form it occurs, it is one of the most terrible and unmanageable of the diseases of the lungs.

The following are some of the forms of this disease:

1. A gangrenous eschar rapidly produced from causes which, under ordinary circumstances, would cause simple pneumonia or pleurisy.

2. Gangrene of the lung occurring as a consequence of diffuse or erysipelatous inflammation.

3. Arising from long exposure of the surface to cold.

4. Occurring in the consolidation of the lung observed in bad cases of typhus fever.

5. Induced by contused injuries of the chest.

6. Repeated distinct attacks of acute gangrenous disease, with severe symptoms of irritation and high fever. The attacks, with the exception of the first, not having any apparent exciting cause, and continuing to recur for a great length of time.

7. Chronic gangrenous cavity with great diminution of volume.

8. Recent sphacelus of one lung supervening on a chronic gangrene of the opposite lung.

9. The result of pressure of the nutrient vessels and nerves of the lung by aneurismal or cancerous tumours.

There are other forms of the affection, but the above are those which have come under my observation.

The general symptoms have a close similarity in the various forms of the affection, consisting in cough, with an extreme and perfectly peculiar fetor of the breath. There is generally copious expectoration of a sanious or muco-purulent character; but neither with this nor with the breath is the fetor constantly associated, for it is found to appear and to subside in singularly short spaces of time. This fetor is of all stenches the most terrible. It is commonly perceived during a fit of coughing, and appears to be produced rapidly by the use of stimulating food or drinks. It may subside for a great length of time, and be again produced without our being able to explain the cause of its re-appearance. The system seems to suffer from the effects of a septic poison, and a weakened and leuco-phlegmatic condition is observed in most of the chronic cases of the disease.

We would, however, fall into error if we were to consider all cases of cough, with fetid breath and expectoration, as

cases of true gangrene of the lung. Dr. Graves has shown that these symptoms may come on in chronic bronchitis(*a*). Dr. Williams describes cases of fetid abscess of the lung with recovery, a disease which I have also observed in the pneumonia following measles. I have more than once observed a distinct gangrenous odour on the breath of a lady who had recently suffered from slight bronchial hemorrhage. And in cases where an empyema opens through the lung the discharge has sometimes an extreme degree of fœtor. In such cases there is no sphacelus of the tissues, and we have only putrefaction of a secreted fluid occurring after it has occupied its containing cavity.

We may here pause, even at the risk of digression, to inquire, why it is that this change does not more often occur, both in bronchial effusions and also in the fluid contents of an empyema? In the case of an empyema with closed sac, we may presume that the want of contact with air is the cause of absence of putrefaction; but in copious bronchial effusions, in the fluid contents of open tuberculous abscesses, and, above all, in the case of empyema and pneumothorax with pulmonary fistula, the preservation from a septic state of the secreted matters is one of the most singular of pathological phenomena.

In the case of empyema with pulmonary fistula we may have many pints of a highly animalized fluid, mixed with floating fragments and shreds of lymph, kept at a high temperature and in contact with atmospheric air, which is more or less renewed at every inspiration. And yet this fluid remains for months, or even more than a year, without putrefying; when, if it were withdrawn and kept at the same temperature and in contact with air outside the body, it would run rapidly into decomposition. We can only explain this by assuming that actual organic connexion is unnecessary for a certain degree of inherent vitality, or that there is a vital irra-

(*a*) Clinical Medicine, 2nd ed., vol. ii. p. 52.

diation from surrounding parts. The organization of effused lymph, and its transformation into fat, or cancerous or bony structures, seem to favour these views.

It is many years since I saw a case which, as bearing on these points, is worthy to be placed on record. A gentleman past middle age had for some months laboured under the ordinary form of tuberculous phthisis. In the course of some months empyema and pneumothorax with fistula occurred with the usual symptoms, and he remained for a great length of time with the usual symptoms and signs of this condition: there were no evidences of putrefaction. The liquid effusion slowly increased until the pressure was so great as to cause extreme distress, and the operation of paracentesis was performed by Mr. Porter, merely as a palliative measure. As is usual, however, in such cases, there was but little relief given. The fluid drawn off was of the ordinary sero-purulent tint, and had not the slightest unpleasant odour. The liquid effusion again accumulated, and a fluctuating tumour appeared at the situation of the cicatrix of the puncture. This was opened by a lancet, and a great quantity of matter given exit to, still free from fetor. Soon after this the patient complained of great internal distress; his strength rapidly sank, he began to cough up fetid matter, and his breath had an intense gangrenous stench. He died in a few days after the second operation. On dissection a quantity of dark-coloured and putrid fluid was found in the pleural cavity; the serous membrane had passed into a state of universal sphacelus, and hung in blackened shreds; the periosteum was also mortified, and the ribs appeared in a state of necrosis. The fistula was easily found, passing into a tuberculous cavern in the antero-superior portion of the lung.

It would appear that, in this case, gangrenous action spread from the wound to the pleura, which was then deprived of its vitality; and, consequently, the fluid in the cavity passed rapidly into putrefaction. We cannot suppose that this change

was produced by the admission of air, as, for many months before the operations, air had been freely entering through the pulmonary fistula.

I formerly entertained the opinion that this disease was most frequently met with in persons addicted to the abuse of spirituous liquors; but I have since seen many instances where it occurred in the most temperate individuals. I have not met with any examples of the disease in the child.

One of the most singular and not unfrequent characters of the disease is the extreme severity of the pain which attends its invasion. We observe this not only in patients who have experienced but a single attack, but in another form, which I shall just now describe, and which I have noticed as the ninth in the catalogue of forms of this disease, given at the commencement of this paper. This pain is more severe than that in ordinary acute pleuritis, and the extent of serous inflammation is by no means commensurate with the amount of suffering. In the recurrent form of the affection, I have seen each attack accompanied by this agonizing pain, and this at a time when the patient was reduced to almost the last stage of exhaustion.

In my work on diseases of the chest I have noticed some forms of gangrene of the lung. Since then I have met with several cases presenting the disease under new conditions, which may be described as follows :

- I. Gangrenous eschar, in typhoid pneumonia.
- II. Circumscribed sphacelus, in cases of diffuse inflammation.
- III. Chronic gangrene, producing dexiocardia.
- IV. Frequently recurring attacks of gangrenous disease of the lung.

Of the first of these my friend Dr. Hudson has given a good example, which was observed in our wards, and I therefore need not here do more than refer to his paper(a). The second form may be illustrated by the following case :

(a) On Typhoid Pneumonia. Dublin Journal, First Series, vol. vii., p. 372.

A young female was attacked with a low form of spreading erysipelas, which extended from the legs upwards to the trunk; the respiration became impeded, and the right lung soon presented the signs of consolidation in its posterior and inferior portions, without the usual signs of progressive pneumonia. Bronchial effusion soon set in, and the patient sank. There was but little pain, nor was there ever fetor of breath or expectoration. On dissection, the lower lobe of the right lung was found solid, of a yellowish-gray colour, soft, impermeable, leaving a smooth surface under the scalpel, from which a sero-purulent fluid could be expressed. Within about an inch of the outer surface, and towards the lower portion, we found a cavity completely filled with sanious pus, having the most extreme fetor. There was no bronchial communication, nor any air in the cavity, the sides of which were formed by the condensed lung, and presented a broken and shreddy surface. This cavity was well-defined, and could have contained a large walnut.

This case is of importance, as exhibiting a true gangrenous cavity, although there was no communication with the external air.

Gangrenous Cavity in the upper Portion of the right Lung, with Dextrocardia from the diminished volume of the organ.

I have met with but one example of this hitherto undescribed form. The patient was an old man, who had for many months laboured under cough, emaciation, and fetid expectoration. He presented, on admission to hospital, the ordinary signs of a circumscribed cavity below the right clavicle; gurgling and cavernous respiration being distinct. The heart was found pulsating to the right of the sternum; and though its action was feeble, there was no difficulty in recognising it, owing to the emaciation of the patient. On dissection, a gangrenous cavity, nearly the size of a goose-egg, was found in the supero-anterior portion of the upper lobe, communicating with the bronchial tubes, and exhaling an abominable odour.

There was another appearance which I had never before seen. We found, scattered over the anterior surface of the lung, superficial sloughs between the lung and pleura, not communicating with the bronchial tubes. They were about a third of an inch in depth, and about an inch in length; their form, an elongated oval. In one of these, the blood-vessels, still pervious, were found to traverse the cavity; while in another, which lay on the anterior face of the middle lobe, a large mass of nearly detached and putrid cellular structure was discovered. On the side, the superficial eschars resembled at first view the ordinary markings of the ribs on the lung. The heart lay completely to the right of the mesian line.

We may then add gangrene of the lung to the list of causes of dextrocardia from diminished volume of the right lung.

Frequently recurring Attacks of local Gangrenous Disease, accompanied on each Occasion by severe constitutional Disturbance.

Of this extraordinary form I have seen two well-marked examples; and I am not aware that its symptoms and history have as yet been described in any work on pulmonary diseases. In one instance, which occurred in a female of middle age, the disease proved fatal after a continuance of many months. The other example was in the case of a young man who, after a long struggle with the affection, seemed to have recovered perfectly. He left this country, and remained in the South of Europe, free, as I understand, from any symptoms of his former malady; but was attacked in the ensuing summer with symptoms of acute pneumonia, under which he sank.

This form of the disease may be described as consisting in a succession of distinct attacks, with high fever and general constitutional disturbance, followed by copious expectoration, which exhales the most intense fetor, with or without blood. The breath becomes fetid, and the patient's condition, during, as it were, the paroxysm of the disease, is distressing in the highest degree. In both these cases intervals of apparently

complete recovery were observed. The pulse, which had presented all the characters of inflammatory fever, would become tranquil, the respiration quiet, the cough would almost wholly subside, and the appearance of the patient improve so much as to lead to the belief of perfect recovery; when another attack, like that which had preceded it, would set in, and run a course precisely similar to that of the last invasion of the disease. The physical phenomena in both these cases were in the early stage of the disease singularly obscure, and, in their character and extent, quite incommensurate with the violence of the symptoms, and the severity and danger of the disease. To this subject I shall recur.

The first case was that of a lady, past thirty-five years of age. She had never before been subject to pulmonary disease, when, after a long exposure to a cold sea-fog, she was attacked with symptoms of bronchitis, accompanied by the sensation of pain and oppression referable to the lower portion of the left side. Within a week of the attack she expectorated some fetid matter, after which she appeared to improve. She bore a long journey to Dublin without any inconvenience, and I saw her within a month of her recovery from the first attack. Her circulation was then tranquil, her cough very trifling, with mucous expectoration, which was free from any fetor, as was also her breath; in fact, she had no appearance of disease, beyond the slightest possible cachectic hue. The chest sounded everywhere perfectly clear, and there was no stethoscopic indication of disease beyond a slight and diffused mucous rattle in the inferior portion of the left lung, which was clear on percussion. She appeared to improve for about a fortnight, when, without any apparent exciting cause, she was attacked with most agonizing pain in the situation first affected. The pulse became full, rapid, and resisting; the skin burning hot; the cough constant; the breath extremely fetid; and she expectorated great quantities of muco-purulent fluid, often tinged with blood, and exhaling the most extreme fetor. Not-

withstanding the violence of the symptoms, physical examination gave but slight results; there were no signs of dry pleurisy, no appreciable dulness, and the only change was an increase in the amount of the mucous rattle. The symptoms continued with great severity for about a week, and then subsided; moderate local bleeding, and opiates, being the principal means employed. She had then an interval of ease and apparent recovery, when another attack succeeded, precisely similar in every character to its predecessor. This attack came on without any apparent exciting cause, and thus the disease continued for many months; the attacks slightly varying in severity, but agreeing in the general characters of agonizing pain, high fever, and fetid expectoration. No treatment that was adopted seemed in the least to control the disease; yet, in its intervals, the patient continued able to use nourishment, to sleep well, and to take equestrian exercise. The intervals of the attacks became less, and a permanently febrile state was established, notwithstanding which the remittent character of the local disease continued manifest. I have never witnessed more acute suffering from mere pain than this lady experienced during each attack of this terrible disease; and yet it was not till within two or three months of her death that any important change in the condition of the lung could be detected. The lowest portion became gradually dull; and this change advanced upwards with extreme slowness. The mucous râle gradually passed into obscure gurgling, but it was not until within a few weeks of the patient's death that signs of a cavern were established. The attacks continued with unmitigated violence up to a period not more than a few days before death, and the sufferings from the pain were, if possible, greater as the patient's strength gave way.

At no time did physical examination indicate disease over a space of more than about four fingers in breadth and three in depth in the postero-inferior portion of the lung.

There was no *post mortem* examination.

In the second case the exciting cause was also a long exposure to cold, but under different circumstances. The patient, a young man of fair complexion and soft fibre, while bathing in the sea on a cold and windy day, was carried to a considerable distance from shore by a tide-current; and it is believed that he was nearly an hour in the water before he reached a landing-place, when, as might be expected, he was in a state of extreme exhaustion and collapse. He remained in a weak state for some days, with a slight cough, and then suddenly expectorated some fetid matter. The disease in this case ran a course very similar to that in the former instance, except that it was not accompanied by the extreme and unaccountable pain, and that almost every attack of the fever and fetid expectoration was accompanied by hemoptysis. Like the first case, there were the singular intermissions, with complete absence of fever, and apparent return to health, and the attacks would come on without any exciting cause. It also presented the singular want of coincidence between the symptoms and physical signs. At first, indeed, there were evidences of a congested state of the lower lobe, but these soon subsided, and then for many months the physical phenomena remained almost perfectly normal, except that during the attacks a sonoro-mucous rattle was developed in the lower portion of the lung. The attacks gradually lessened in severity, and occurred at longer intervals, and, after a period of about five months, the patient was so far recovered as to be able to leave this country for the south of Europe. He regained his strength and appearance during a winter passed in Rome, but, as I before stated, died of pneumonia, as was reported in the ensuing summer.

I am anxious here to draw attention to a circumstance of very great importance in practice; namely, the singular obscurity of physical signs in the earlier periods of this disease. This was exemplified in the two cases which have been just now given; and I have had examples of the same difficulty in many other instances.

From considering all the facts of these cases it appears very probable that in the earlier periods of this disease there is no solution of continuity, nor much consolidation of the lung. This, of course, does not apply to that form described by Dr. Graves, where a lung previously hepatized from pneumonia takes on a gangrenous action; a most important variety, which we shall presently examine. Nor is it applicable to some of the cases of hemoptysical gangrene, established by Dr. Law. But in many of the cases of gangrene occurring in a lung not previously diseased, or in what may be termed *primary gangrene*, we see the disproportion between the existing physical signs, and the violence and importance of the disease, in a very remarkable degree.

Is this a disease *commencing in points*, with intervening healthy tissue? If it were so we should expect to meet all the difficulties which attend the detection of analogous changes, such as the first stage of tubercle or isolated cancers. Yet there must be something more, for the great phenomena of the disease are high febrile reaction and copious secretion of a fetid matter. I am of opinion that the portion of the organ which suffers death must be at first very insignificant, but that the surface which secretes the putrid fluid is extensive. It seems almost certain, too, that this fluid is originally poured out in a putrid condition, and the disease at first is essentially one of secretion.

Professor Wood, of Philadelphia, in his *Treatise on the Practice of Medicine*, states, that after the expectoration of fetid matter, a cavity must be held to have formed, and that we can detect it by the usual means. My experience leads me to an opposite opinion on both these points. I have known the expectoration of putrid matter to occur within so short a time after the operation of the exciting cause as thirty-six or forty-eight hours, that it is difficult to conceive the formation of a cavity so rapidly; and I repeat that months may

elapse with the best-marked symptoms, and yet no physical sign of a cavity be discoverable.

From what has been stated we thus draw one practical conclusion. It is, *that in any case where a sudden fetid expectoration has occurred, we are not justified in pronouncing the lungs healthy, or the patient in a safe position, because physical examination, even the most accurate, fails to detect disease.*

This aphorism I would most earnestly impress on the minds of all who may have to deal with cases of this description.

This peculiarity in many cases of gangrene of the lung did not escape Laennec. In speaking of the physical signs he says: "I have been several times assured that the crepitous ronehus did not exist until after the production of the eschar, thereby indicating the formation of the inflammatory circle, which was to operate its detachment." He further observes, that "the invasion is usually characterized by symptoms of slight pneumonia; but this is attended by a degree of prostration of strength, or anxiety quite disproportioned to the severity of the local symptoms, and to the small extent of space over which the respiratory murmur and sound on percussion are wanting." I quote from Forbes's Translation.

Of the two next forms of gangrene which I shall notice here, I have not myself met any example. In the first, which has been described by Dr. Graves, gangrenous action seizes on a lung which had been for some weeks previously in a state of unresolved hepatization; while, in the form described by Dr. Law, the putrefaction of the effused blood in pulmonary apoplexy appears to be the first cause of the disease.

Of gangrene attacking hepatized lung, Dr. Graves gives a remarkable instance in his *Clinical Medicine*(a). The patient

(a) In his observations on this case Dr. Graves inquires, "How are we to account for this sudden supervention of gangrene? There was nothing in the nature of the gangrenous inflammation to dispose it to terminate in

was an old man who had been attacked with symptoms of pleuro-pneumonia, and was admitted with the usual physical signs of consolidated lung and pneumonia. Under a moderate antiphlogistic treatment, and the use of calomel and opium, the progress of the disease was checked, the pain ceased, and the respiration became less frequent, but still continued at the rate of thirty in a minute, while the stethoscope indicated no tendency to resolution. In this state the patient continued for a week, when he was attacked with symptoms of laryngitis, with copious muco-purulent expectoration. This was speedily followed by extreme prostration, the countenance became sunk and livid, the breath exceedingly fetid, and the expectoration greenish, ichorous, and intolerably fetid. The patient died within forty hours after the commencement of the last attack.

In addition to the gangrene of the lung the posterior surface of the larynx was found destroyed by gangrenous sloughing.

The putrefaction of blood previously effused into the substance of the lung, as in cases of pulmonary apoplexy, has been considered by Dr. Law as constituting an important

this way. It had lasted for three weeks, and had arrived at a stage in which inflammation very rarely assumes the gangrenous character. To what then are we to attribute it? Partly to the debility of the man's constitution, and partly to an erysipelatous tendency in the air, which was at the time prevalent. Except there was something to dispose the lungs to gangrenous disease, as an enfeebled habit and vitiated quality of atmosphere, we could not, under the existing circumstances, have expected such a termination. That this view of the subject is correct, is shown by the simultaneous occurrence of gangrene in another part which had not been previously diseased or subject to inflammation, except shortly before the man's death,—I allude to the larynx.

“What I wish to impress on you is, that though the inflammation of the lungs ended suddenly in gangrene, it was not in consequence of the inflammation having in itself any such tendency, but in consequence of the change produced in the man's constitution by atmospheric influence, and which was favoured by his advanced age and great debility.”

variety of pulmonary gangrene. I have not seen any cases of the change from one of these diseases into the other; and I apprehend that the occurrence must be rare. I would say further, that where a clot of blood effused into the lung putrefies, this change is in itself a proof of a gangrenous disposition pre-existing; and I feel satisfied that the hemorrhages in cases of gangrene have no relation to pulmonary apoplexy.

That an effusion of blood into the lung does not more often end in putrefaction of the fluid is certainly an extraordinary fact; but not more so than the rarity of putrefaction in abscesses, tubercular cavities, or empyema and pneumo-thorax. That it is rare, appears from the fact that neither Laennec, nor many other writers on pulmonary apoplexy, mention gangrene as a result of the disease; which, besides, is in many instances connected with disease of the heart, producing either an active or passive congestion of the lung. The production of gangrene, however, seems in no way connected with lesion of the heart. We may also refer to the rarity of putrefaction of bloody effusions in the brain and in other parts of the system, even where the quantity of blood effused is enormous, as in cases of long-existing diffuse aneurisms.

I do not wish to be understood as denying the possibility of the passing of a pulmonary apoplectic clot into putrefaction; but that the accidental putrefaction of blood effused in the lungs is to be reckoned as even an ordinary cause of pulmonary gangrene, I feel great reluctance to admit.

Mr. O'Ferrall, adopting generally the views of Dr. Law, goes a step further, and describes a non-putrefactive gangrene of the sanguineous clot, and also states that the clot may undergo the process of puriform softening; a condition in itself not gangrenous, so far as the clot is concerned, but which may be attended with sloughing of the surrounding tissues. Without denying the accuracy of these observations, I apprehend that Mr. O'Ferrall's distinctions are, perhaps, too finely drawn; and it is, at all events, clear that, in the present state of our know-

ledge, there is no practical benefit to be derived by the attempt to distinguish between the ordinary forms of gangrene, and that in which sloughing of the pulmonary tissue complicates or succeeds to the puriform softening, as described by Mr. O'Ferrall.

The researches of these gentlemen, however, are of great value, as still further corroborating the opinion already announced by Laennec, that gangrene of the lung does not necessarily imply a previously intense inflammation^(a).

There is a great difficulty in drawing the line between what has been termed fetid abscess of the lung and true gangrene. Are they cases of original gangrenous action, or examples merely of putrefaction of the fluid contents of a pulmonary abscess? Are they examples of gangrenous action speedily formed, and as speedily arrested? for we know that many such cases have eventuated in recovery. Further investigation alone will suffice to clear up these points. With the sudden formation of gangrenous action every practical man is familiar, but its sudden cessation is a circumstance not yet sufficiently recognised; yet we may observe this singular phenomena in certain cases of typhus fever, when the occurrence of local gangrene is manifestly under the operation of a law which regulates the general morbid state arising in the progress of that condition, and suddenly ceasing with its termination.

We may see a patient presenting every day new bed-sores in every part of the body, where even the slightest pressure has been exercised; a condition so apt for the gangrenous state, that the mark of the hand may be imprinted in mortification on the face if the patient has lain but for an hour with the cheek supported by the hand. Every day new cutaneous gangrenes are formed up to a certain period, when, as if this ten-

(a) See Dr. Law's paper, Transactions of the Association of the King and Queen's College of Physicians, New Series, vol. i. Also Mr. O'Ferrall's Observations in the Transactions of the Pathological Society, Dublin Journal of Medical Science, First Series, vol. xix. p. 121.

dency, like the other secondary effects of fever, was under a law of periodicity, not only are no new gangrenes produced, but those already formed at once take on a healthy action. May not the same condition occur in local disease of the lung? How many of these diseases, supposed to be idiopathic, are really secondary to an unrecognized morbid state of the entire system.

Practically, however, we may form this conclusion, that, in any case of fetid expectoration, the earlier we discover the physical signs of cavity, or of manifest local disease, preceding the cavity, the better should our prognosis be.

It would be difficult, and, in some cases, perhaps, impossible, to make an accurate diagnosis between fetid abscess of the lung and gangrene; especially, when the case is seen for the first time, and the fetid expectoration established. If the manifest signs of the cavity appear at a very early period of the case, say within a week or ten days of the first invasion of disease, we ought to lean to the more favourable opinion of abscess. It must be remembered, however, that this is the more rare condition, and that, as in the case of typhoid consolidation, a gangrenous eschar may form rapidly, and present the signs of cavity.

An important case, illustrative of these remarks, is given by Dr. Hudson. The patient had been attacked with pneumonic symptoms ten days before he came under observation. The lower lobe of the right lung was solidified, while cavernous respiration and pectoriloquism existed at the angle of the scapula. Next day the breath and expectoration were fetid, and all the signs of a cavity very distinct. In about twenty-four hours the fetor ceased, and the seventh day after his admission to hospital the signs of cavity had disappeared.

We have in this case two circumstances leading to the diagnosis of fetid abscess rather than of true gangrene; first, the early formation of a cavity, and secondly the existence of well-marked physical signs of extensive recent solidification.

Of a similar nature is the example recorded by Dr. Williams in the *Cyclopædia of Practical Medicine*.

In addition to such cases of fetid abscess there are two other examples of disease which may be mistaken for gangrene of the lung: one the perforation of the pleura by an empyema, and the evacuation of the fluid through the lung; and the other, that which is commonly described as the opening of an hepatic abscess into the bronchial tubes. It does not invariably occur, however, in either of these diseases, that the fluid evacuated is putrid, so that where this character is absent it is not likely that the case would be confounded with gangrene. We only know that in certain cases belonging to either of these categories the patient at some period, either earlier or later in the disease, expectorates for a considerable time a quantity of the most offensive matter, has a fetid breath, and presents symptoms which may be attributed to the presence of a septic poison acting on the economy.

If we compare these two cases with regard to the facility of diagnosis, we shall find much less difficulty in the first than in the second example. Indeed our knowledge as to this last class of cases is still extremely imperfect, as will be seen when we treat of perforations of the lung.

The diagnosis of the first is in general not difficult, and rests upon three considerations:

- I. The early symptoms, which are those of pleuritis with effusion.
- II. The physical signs observable before the occurrence of any fetid expectoration, which are indicative of a manifest and extensive lesion.
- III. The coincidence of the phenomena of pneumo-thorax, complicating those of empyema, coincident with the occurrence of fetid expectoration.

In such cases we are not yet able to say whether the putrescence of the empyematous fluid existed before the perforation of the pleura, or occurred subsequently to the admission of air,

but it appears that in some instances the signs of putrescence have rapidly followed those of the perforation of the pleura.

Of this condition I saw a remarkable instance some years ago. A gentleman aged 23 was attacked with the usual symptoms of pleurisy of the left lung, followed by copious effusion. The disease was violent and obstinate, and no sign of absorption was observed after some weeks of the malady, when the patient began to expectorate copiously a muco-puriform fluid, which speedily became extremely fetid. Soon after this I saw him. The fetor was so intense as to infect the air throughout the whole of a very large house, and the secretion was extremely copious. The lower portion of the left side was dull, while above, and extending nearly to the spine of the scapula, there was tympanic resonance, with amphoric respiration, and metallic tinkling and voice. The weather being warm, the patient suffered extremely from heat, and he was advised in consultation to take the air in an open carriage; but after proceeding a short distance from his house, he was literally driven back by the swarms of flies, which, attracted by the odour, settled in myriads on his person and his carriage. This patient, to the surprise of all around him, ultimately recovered, but with the greatest amount of contraction of the side that I have ever witnessed, the left shoulder being depressed to between two and three inches.

This case occurred about ten years ago, and the gentleman has enjoyed excellent health during that period.

Our knowledge of the second class of cases is still so limited that we can do little more than indicate their general character. A patient suffers, or is supposed to suffer from acute hepatitis, followed by constitutional symptoms indicating suppuration. After a time he begins to expectorate purulent matter, which may or may not be putrid. These cases have been hitherto supposed to be examples of perforation of the diaphragm and lung, and direct evacuation of the hepatic pus; but there is reason to doubt the existence of this triple lesion

in many instances, and it seems probable that we may often refer the phenomena to vicarious secretion, independent of any solution of continuity. In such a case, no matter how great the fetor, we should be extremely slow in assuming the existence of a pulmonary gangrene.

The attention of the physician in such cases should be directed to the following points:

- I. The pre-existence of symptoms of hepatic disease.
- II. The fact that though the symptoms are those of confirmed gangrenous abscess, the physical signs of such a condition are wanting.
- III. The rarity of hemoptysis in these cases, as compared with those of ordinary gangrene of the lung.

It may be stated that in these three cases of pneumonic abscess, empyema opening into the lung, or hepatic abscess, with or without a perforation of the lung, we are utterly in the dark as to the causes which determine putrescence in some, and its absence in other examples of these diseases.

If, on the other hand, we have been able to observe the case from its commencement, and traced the symptoms and signs of a pneumonia to its suppurative stage, we might then, on the occurrence of fetor, diagnose putrid abscess. I have never seen any case of true primary gangrene of the lung preceded by the signs of the successive stages of pneumonia.

In most of these cases it is only with reference to prognosis that the determination of the question is of importance, for the treatment of the disease in either case should not materially differ. In Dr. Hudson's case, however, it will be seen that certain measures, such as local bleeding, and the use of large doses of mercury, were used with good effect subsequently to the formation of the abscess.

An important case of gangrene of the lung, and purulent deposits, is mentioned by Dr. Wiseman, in the Reports of the Liverpool Pathological Society(*a*). The patient, a female of

(*a*) Dublin Medical Journal, First Series, vol. xxvi.

rather intemperate habits, had been liable to chronic cough. She was attacked with what was probably diffuse inflammation of the vulva, which soon took on a gangrenous character. She died in three weeks, and it was found that the lower lobe of the right lung contained three gangrenous cavities which did not communicate with the bronchial tubes.

The left lung contained many small circumscribed deposits of yellowish purulent matter, not gangrenous.

Can we interpret the phenomena in this case by supposing the absorption of gangrenous matter, and recent gangrene of the lung thus induced? The fact of the co-existence of the disease with purulent deposits would seem to strengthen this supposition, to which Dr. Wiseman appears to incline.

The following conclusions appear justifiable from the present state of our knowledge on this subject.

1. That gangrene of the lung is met with under a variety of forms, differing from one another not only in the duration and violence of the symptoms, but also in their relations to various local and constitutional diseases.

2. That in a great proportion of the cases the disease is attended with putrefactive action engaging the necrosed portion of the lung, and affecting its secretions.

3. That in the progress of a case, we may observe the septic action singularly variable. It is increased by over-stimulation of the system.

4. That we cannot explain the symptoms in many cases of this disease, without assuming, either that a spot of mortification, so small as to be undiscoverable by physical means, causes severe symptoms, and is attended with super-secretion; or that a process of putrefactive secretion precedes, in many cases, the death of the lung.

5. That pain of the most extreme kind may attend this disease; and, in the remittent form, appear on each access of the affection with unmitigated violence.

6. That the contact with air is not necessary for the formation of a gangrenous eschar or cavity.

7. That hemoptysis commonly attends each access of the remittent disease.

8. That in the earlier periods of this disease, auscultation and percussion often fail in detecting any signs of organic change; or if such is discovered, it appears incommensurate with the gravity of the symptoms.

9. That in many cases the evidences of congestion and parenchymatous infiltration, seem to follow, rather than precede the symptoms of gangrene.

10. That dextrocardia, from diminished volume of the lung, may occur in gangrene of the right lung.

11. That gangrene may attack a lung previously hepatized from ordinary inflammation, or in a chronic tubercular condition.

12. That from the pre-existence of signs and symptoms of the stages of pneumonia, or from the early appearance of signs of excavation, we may be able to distinguish between fetid abscess of the lung and gangrene.

13. That in certain cases of chronic bronchitis the breath and expectoration may become fetid, and yet no gangrene appear to have formed.

14. That the diseases with which gangrene may be found complicated are divisible into general and local affections; but that its occurrence in the class of general diseases, termed putrid or asthenic, is much more rare than might be expected.

15. That it is rarely observed in the typhus fever of this country, even where the secondary bronchial affection is intense; but that in typhoid pneumonia it may be occasionally observed.

16. That it may complicate a previously existing disease of the lung, such as pulmonary tubercle, or an unresolved hepatization.

17. That it may be directly induced by the pressure of a tumour on the nutrient vessels and nerves of the lung, so that in cases of cancerous or aneurismal tumour, the patient may

die, not from the extension of the original disease, but from its inducing a rapid mortification of some portion of the lung.

18. That the disease, though always of a formidable character, is not necessarily fatal.

ART. II.—*On the Law of Mortality in Phthisis, and the Influence of Moral Causes in producing the Disease.* By JAMES F. DUNCAN, M. D., T. C. D., Fellow of the College of Physicians in Ireland; Physician in Ordinary to Sir P. Dun's Hospital.

(Continued from p. 269, vol. viii.)

IN the last Number of the Journal I directed the attention of the profession to the law of mortality in phthisis, as deducible from the only public documents of a statistical kind which appear to deserve implicit credence.

The investigation of the subject has brought to light one remarkable fact, not, so far as I am aware, previously noticed, namely, that in an agricultural district the majority of cases of consumption occurs among females, but in cities and large towns, on the contrary, among males(*a*).

A careful consideration of this striking fact, while it served in some measure to reconcile the conflicting opinions of previous writers, necessarily overthrew the various theories which had been put forward to account for the supposed excess of liability on the part of females to the affection, and suggested the idea that the difference in question can only be accounted for on the hypothesis, that moral causes must, *in a great measure*, be concerned in the production of the disease. I say, "in a great measure," because I am anxious to guard against the risk of being supposed to attribute the development of tuber-

(*a*) This fact has not escaped the attention of the authors of the Medical Report of the Hospital for Consumption at Brompton, dated in April, 1849, but which did not reach us until after the publication of our last Number.—
ED.

cle to the exclusive operation of these causes. I believe that no point in the pathology of phthisis is more satisfactorily established than its constitutional origin in a large number of instances.

My intention, on the present occasion, is to follow up what was then advanced upon this subject, by a few additional arguments; and the first I shall adduce is derived from the mental constitution of those persons who are usually the victims of the complaint. This point I cannot establish by numerical statements similar to those which have been already furnished, because no such data are in existence; but I can appeal to the ordinary experience of every physician to say whether the disease does not usually occur in persons whose temperament is peculiarly liable to be affected by moral impressions. Individuals there are who may be safely said to be exempt from its ravages altogether; but they are those who are more than usually blunted to the opinion of their fellow-men. An unmitigated independence of thought and feeling is the stern attribute that distinguishes their character. They act upon their own judgment, gratify their own passions, and pursue their own ends, utterly regardless of the good or bad opinion of their neighbours.

“ *Populus me sibilat; at mihi plaudo*
Ipsæ domi —”

is their motto. The miser, the truculent warrior, the remorseless tyrant, and others of the same class, are examples in point. No one has ever heard of persons of such a character dying of consumption. But, if the exemption be real, it is limited to a small number. Happily for society, the minds of men are not generally cast in such a mould. On the contrary, most persons will be found to be swayed to a certain extent by public opinion, and to receive impressions from the varying circumstances in which they happen to be placed, and hence their liability to be attacked by the disease in question.

Who is there that has not remarked, that the man of warm affections, of refined taste, of a cultivated intellect, who shrinks

from the slightest imputation of what is wrong, is the man of all others who has the greatest reason to fear the invasion of this insidious malady? What is the meaning of that common proverb, "too good to live," but this, that the gentle, the unassuming, the unselfish, and the kind, are peculiarly liable to be hurried to an untimely grave, while the disease that carries them away is undoubtedly consumption. Similarly, when the warm affections of a young and amiable girl have been crushed unexpectedly by some overwhelming disappointment, and she dies, as it said, of "a broken heart," what is the peculiar form which the fatal malady assumes? Is it not consumption?

Many passages, from various writers, but especially from the poets, might be quoted to support the assertion, that it is matter of observation that persons of this mental constitution are more than usually liable to the disease under consideration.

But I hasten to an argument of a different kind, which appears to me to be equally deserving of consideration, and that is the age at which the disease proves destructive to its victims. Were it the result of physical causes exclusively, such as variations of temperature, exposure to cold and moisture, residence in a peculiar climate, deficient or unwholesome food, &c., we would naturally expect to find it equally destructive at all ages. But this is not the case, as the following table, extracted from the Third Report of the Registrar-General, fully proves:

Age.	Manchester.		Liverpool.		Birmingham.	
	M.	F.	M.	F.	M.	F.
Under 1	68	47	58	68	45	38
1 to 2	52	60	99	101	26	30
2 " 3	17	18	25	23	6	12
3 " 5	20	15	27	31	18	16
5 " 10	16	20	27	12	13	18
10 " 15	39	49	38	32	27	29
15 " 20	96	95	137	116	58	54
20 " 30	98	90	127	123	67	44
30 " 40	90	62	93	76	48	28
40 " 50	51	55	53	49	43	21
50 " 60	29	25	36	25	12	11
60 " 70	14	10	10	7	3	1
70 " 80	1	0	0	3	0	0

I have selected these towns, not because they were peculiarly favourable to the views I advocate, but because they are the only ones given in the Registrar-General's Reports, where the ages at which the patients died, as well as their diseases, have been publicly recorded. It is much to be regretted that the same has not been done for the entire kingdom, as well as for these larger districts, with the view of contrasting the influence of town and country life upon the health of the community. The reason I say so is this: the population of towns, more especially the male population, fluctuates exceedingly, in consequence of the constant influx of strangers, induced by the expectation of employment, the facilities of education for the young, or the attractions of social intercourse for all. As a consequence of this fluctuation, the rate of mortality is obviously liable to be disturbed from what it would be were the population unvariable. The amount of this disturbance varies inversely with the field of observation; and hence it becomes a matter of some importance, in attempting to estimate exactly the rate of mortality, to extend our observations as widely as possible, instead of confining them to a single town.

In the Supplemental Tables to the Irish Census, so ably compiled by Mr. Wilde, we have greater facilities for ascertaining the ages of those who died of phthisis, in the ten years to which they refer; but from the causes already referred to, they are less worthy of attention. Indeed it must be obvious to every one, that of all the information afforded by the Irish tables, that which refers to the age at which individuals have died some years before, must be the most uncertain. To enable the reader to form a more accurate idea of the influence of age in inducing consumption, I have calculated the proportion of deaths to the number of individuals actually living at the corresponding age, in each of the following towns and in Ireland:

Age.	Liverpool.		Manchester.		Birmingham.		Ireland.	
	M.	F.	M.	F.	M.	F.	M.	F.
5 to 10	·19	·08	·12	·15	·12	·16	·0	·0
10 „ 15	·28	·23	·31	·40	·28	·30	·09	·13
15 „ 20	1·11	·80	·84	·72	·66	·57	·20	·22
20 „ 30	·43	·35	·43	·32	·39	·23	·30	·26
30 „ 40	·40	·32	·49	·31	·38	·21	·32	·35
40 „ 50	·37	·34	·59	·59	·49	·23	·43	·47
50 „ 60	·53	·34	·67	·47	·24	·21		
60 „ 70	·28	·21	·42	·24	·11	·03		

The calculation has not been made for the period extending from birth to the fifth year, because there is a great excess of deaths registered in the first two years of that period; and the Census returns do not enable us to make it for each year separately. Making due allowance for the unsteadiness of the population already hinted at, and its influence upon the returns, I think it cannot fail to be apparent that there is a remarkable correspondence in the general result of this table, and, consequently, a strong confirmation of the doctrine of a law of mortality, as already explained. There appears, then, to be three periods of life at which the mortality of phthisis exhibits a maximum intensity. First, that immediately succeeding birth; secondly, that which commences at the epoch of puberty; and, lastly, that which corresponds to the decline of mature life. The first takes place at a period when moral causes can have no influence either in exciting or aggravating the liability; it is hence due to the force of constitutional predisposition almost exclusively. The other two are the result, in part at least, of moral causes which act at these periods of life with more than usual intensity.

Moral impressions produce their effect either by aggravating a tubercular diathesis already existing, but of too weak a character to destroy life by itself, or, where no such diathesis prevails, by breaking down the health of the individual in the first instance, so as to generate the conditions which are necessary for the development of the complaint. I think it

is not difficult to show that the ages at which moral causes produce their greatest impressions upon our system are precisely those of puberty and the decline of life. Before puberty, our moral nature may be said to be undeveloped; care, the canker of our existence, is then unknown; the anxieties which result from intercourse with the world, and from the exertion of independent enterprize, do not yet begin to agitate the breast. Even the affections, the fertile source of disease in after-life, are then incapable of producing such a result. Hedged in within the narrow limits of the family circle, they have sufficient scope for their gradual development and their healthy exercise, while they are sheltered from those sudden vicissitudes of excitement and disappointment which constitute the chief dangers they have subsequently to endure. But when the full period of puberty has arrived, with its characteristic changes in the physical organization of the frame, how different is the state of things. New ideas occupy the mind, new emotions swell the soul, new passions agitate the breast. The child has become a man, and, instead of being satisfied to occupy a subordinate position beneath his father's roof, he burns with the desire of asserting his own independence; he thinks and acts and feels for himself; and the consciousness of the capacity of becoming a responsible member of society prompts him to long for that opportunity that will place him in the position to which he feels himself entitled. But the transition from one of these conditions to the other is full of danger. Success or failure is alike trying to his moral constitution. The young emotions, that, like summer-buds, are bursting into blossom, are too delicate to withstand a premature exposure to the nipping frosts of a cold and chilling world.

It is easy to understand that, during adult life, the same causes, continuing to operate, should produce the same result, only in a less remarkable manner, from the circumstance that the sensibility becomes blunted, and experience makes us cal-

lous to impressions that would previously have been felt with keenness. But it appears at first sight somewhat difficult to account for the greater fatality of phthisis, as shown by these tables, in the decline of life than during the continuance of maturity; because, if the diminution in the number of cases registered in adult life is in any measure due to the passions becoming weaker, it ought to continue diminishing to the end of the three score years and ten that are allotted as the natural limit to our earthly existence. A little consideration is all that is necessary to correct this conclusion. In the first place, if the passions become weaker as age creeps on, so does the sustaining power of hope. If a man be unfortunate in middle age, he feels the disappointment more acutely than he would do if he were older; but then he is more capable of exertion to correct its effects. He can begin his former enterprise anew, or he can try some other; and the expectation of success, though not so great as that with which he set out in life, is still sufficient to carry him through the trying hours that are yet before him. In advanced age, on the contrary, he has not the energy to commence his original pursuit *de novo*, with a ruined fortune and a broken spirit. He is seldom capable of turning to anything else with the prospect of success, and there is nothing left him, in general, but to sit down in hopeless despair. This is the first and principal reason. But there is another, to which I shall presently have occasion to call attention more at length, and that is the difficulty of procuring employment for the aged. I speak not now of employment as embracing pecuniary remuneration, and, in that sense, exercising a cheerful influence upon the *feelings* of the individual; I speak of employment merely as occupation for the *thoughts*, and, as such, a preservative against the inroads of the disease we are considering. Few persons will employ the old, when they can get younger hands to do the work they require; fewer still will employ those whose misfortunes or misconduct have been the cause of their seeking such employment; and

hence the old, whatever may have been the nature of their previous pursuits, and whatever the cause of their ill success, are generally left to drag out the wearisome remainder of their days in idleness and disappointment. Can anything of a moral nature be more calculated to weigh down the drooping spirits, till disease and death, in some shape or other, come to relieve the sufferer?

To afford a more accurate idea of the foregoing table, I may mention, that the Registrar-General^(a) has made the mean average mortality in the metropolis to be 0·40 for males and 0·37 for females,—a statement which, if we suppose it true of the towns I have referred to, will prove that, from childhood to puberty, the ratio is far below the mean; during adult life, it corresponds to it almost exactly; and that, at puberty, and from the fortieth to the sixtieth year, it greatly exceeds it. It is scarcely necessary for me to mention the circumstance that these returns contradict, in the strongest manner, the popular opinion that infants and old persons are exempt from the ravages of consumption.

The last argument I shall adduce has reference to the mode in which *employment*, considered abstractedly, acts upon the system. Employment, of every kind, has a double effect upon the individual engaged in it. The first and most direct is that produced by the mere circumstance of the attention being occupied for a given time in the pursuit immediately in hand. The second is the remote effect produced through the agency of the moral sentiments. These latter are excited or depressed according as the peculiar nature of the employment happens to be congenial to the taste of the individual, or otherwise. They are also affected by the circumstance of success or failure attending the enterprise engaged in. The observations in the previous part of this paper have reference to this aspect of the question more especially; but the other

(a) Third Report, 8vo. ed. pp. 249, 250.

effect to which I have just now alluded deserves consideration also. It can scarcely be questioned, from the mere fact of man having been created an intelligent being, that the exercise of all his faculties within proper restrictions is essential to his health and happiness, and that any departure from this obvious condition of his existence must be attended with injurious consequences. If the mind be suffered to lie fallow for a length of time,—from absolute want of occupation, or from occupation which does not sufficiently engage the attention,—the person so offending is sure to suffer the penalty entailed upon the infraction of Nature's law. That penalty does not consist merely in the wasting of the powers immediately concerned, it embraces also the remote obstructions to the healthy action of the machine that result from an essential part of the animal organization getting out of order; just as if, in a watch, the movement of the hands were to be sustained by some accidental arrangement different from the original construction, while the main-spring and central parts remained motionless. Such a state of things might continue for a time, without injury or without inconvenience; but let it be unduly protracted, and the necessary result would be the formation of rust upon the unused parts, which again would re-act upon the others, inducing, first, irregularity, and ultimately a total suspension of their movements.

Practically speaking, it is not very easy to estimate exactly the precise extent to which want of employment by itself operates in producing disease, because it is impossible to separate it completely from the moral impressions which accompany it in actual life. The following instances, however, appear to me to suggest that one of the modes in which mental inaction operates injuriously is by developing consumption.

In a paper read by Mr. Noble before the Medical Section of the British Scientific Association, at Manchester, in 1842(a),

the object of which was to elucidate by statistical evidence the tendency of the factory system to produce consumption, we find it stated, that a careful examination of the Registrar's returns for the township of Manchester, for the three preceding years, showed that, taking all the cases that died there, from fifteen up to forty years of age, there were:

Employed in factories, ...	174
In other employments, ...	590
Without stated employment, ...	377

The report in the paragraph from which this statement is quoted, as well as that in the Annual Report of the Association, is so very meagre that it is impossible to determine whether the last class refers to cases occurring in the upper ranks of society, whose circumstances placed them above the necessity of actual labour, and consequently above the anxieties and privations inseparable from the want of employment in persons depending upon their own exertions for support, or whether it merely means that the individuals referred to were not in the habit of following any one employment to the exclusion of others. In either case it is not to be denied that moral impressions, in addition to mental inaction, may have contributed very materially to the development of the result in question.

The other instance is the extreme frequency of consumption among the military. In Major Tulloch's Reports of the Health of the Soldiers, we find it laid down that the average annual mortality from consumption, among the dragoon guards, is 0·63 per cent. of the total force. In the infantry of the line the proportion is still greater; while of the entire population of England and Wales the mean average for males is only 0·37 (*a*). Similarly the mortality among the civilians at Malta, on the authority of Major Tulloch, is less than that among the military. In a note to the Sydenham Translation of Louis on

(*a*) Registrar-General's Report, 1841, 8vo. ed., p. 249.

Phthisis, p. 494, speaking of the climate of Mexico, we find this remarkable expression: "The medical men of the town are of opinion that phthisis is rare there, *except among the military.*" How comes it that the profession of a soldier should have this extraordinary tendency to develop the disease? When we consider, in reference to the British army, the care taken in the selection of well-formed and healthy recruits, the judicious liberality displayed in ministering to their comforts, the attention bestowed upon providing them with wholesome food, warm and sufficient clothing, and healthy barrack accommodation, the regularity in the receipt of their pay, the absence of all laborious and fatiguing duty in time of peace, and the skill and attention bestowed upon them when sick, we naturally expect a result the very opposite of that which experience proves to occur. The surprise that such a fact naturally produces is still further increased when we remember that the disease is as rare among seamen as it is common among soldiers, though the physical condition of the former is in many respects much less favourable than that of the latter. The employment of a sailor is more laborious in general than that of a soldier; he is more exposed to the inclemency of the weather, and with less shelter; he is frequently obliged to remain in his wet clothes for hours; when he retires to sleep it is in a close and crowded berth, where he perspires from every pore; and when the four hours of his broken rest are over, he has to start up again, it may be in the middle of the night, to stand shivering amid rain and wind on his dreary watch. Even his food is, in general, inferior to that of the soldier. How comes it then that such a difference should exist in the two occupations as to the liability to this common complaint? I believe it arises from the very different conditions in which they are placed as to moral and intellectual impressions. The soldier in time of peace is doomed to the dull monotony of drills and parades, where the perfection of his service consists in his becoming an animated machine,

to obey, without thought and without resistance, the movement directed by another. Even the accustomed duty of mounting guard is an exertion but little calculated to exercise the reflective faculties, and to gratify the mind. With the sailor everything is different. In all the vicissitudes of sunshine and of storm there is abundance of employment for independent thought and action; his attention is continually occupied, and the scenes through which he passes, from their ever-recurring novelty, prevent that stagnation of the soul which is sure to degenerate into corruption.

I know it may be said that the vices of the military have more to say to the production of the disease in question, than the listlessness of their life. But, without denying that these, so far as they exist, may contribute their share to the result, still I think that any one who considers the improved tone of morals among our soldiers generally, and the little real difference, in this respect, between them and sailors, will be forced to admit that something else must exist to produce a result so different between the two classes of men.

Having said so much upon the influence of moral causes in producing consumption, it remains for me to say a word or two,—first, upon the *modus operandi* of such causes acting on the animal frame; and secondly, upon the practical advantage to be derived from an attention to the subject.

Simon, in his *Animal Chemistry*, vol. ii., p. 479, states the formula for crude pulmonary tubercle to be $C^{43}H^{35}N^6O^{13}$, while that for protein is $C^{48}H^{36}N^6O^{14}$; in other words, tubercle consists of an imperfect protein, differing from it in the absence of five atoms of carbon, one of hydrogen, and one of oxygen. Protein is the starting point of all the tissues, and the primary compound principle of fibrine, albumen, and casein. It is, of course, the natural result of the process of digestion, when healthily performed. When this process, from any cause, is interfered with, the proper combination of the organic atoms does not take place, and a less soluble product

is formed than what the necessities of the system require. Now, it is easy to see that the depressing passions must, to a very considerable extent, operate in this way. All the secretions are under the influence of the emotions to a remarkable degree. Intense sorrow suspends the secretion of the gastric juice. Sudden fright stimulates the kidneys to unwonted activity. Anger arrests the action of the liver. Even the tears do not flow when grief is very violent. Is it at all surprising that a slighter degree of these emotions, acting slowly, but not less certainly, should interfere with some of the deeper processes of digestion, or prevent the full development of a healthy fluid?

Exhilarating impressions, on the contrary, have an opposite effect, causing these processes to take place with greater rapidity and force, and so purifying the system of every stagnant element that might accumulate and become prejudicial. Even ordinary occupation must have some effect in this way, by imparting tone to the various organs immediately concerned, and by permitting them to pursue quietly and without disturbance their proper functions(*a*).

The practical utility of this view of the subject consists, first, in directing us to proper modes of managing those individuals who are born with an hereditary tendency to the complaint, but in whom the constitutional bias is not so great as to prove immediately destructive to life. In all such cases I believe it to be of the utmost importance, in addition to proper hygienic treatment, to have the mind profitably employed in some manner suitable to the tastes and capacity of the individual. I do not, of course, mean to say that the powers are to be overtaken by protracted occupation, and without cor-

(*a*) It is scarcely necessary to remind the reader that the opinion here advocated is strictly in accordance with what has been already published by Sir James Clarke under the head of tuberculous cachexy, and by Dr. Todd under that of strumous dyspepsia, as occurring antecedently to the actual development of tubercle and preparing the way for it.

responding relaxation. Such persons are not formed for great exertion, either mental or corporeal. But it is one thing to give them employment sufficient to occupy and exercise their faculties, and it is another to impose upon them a burden to which they are unequal. Cheerful society should, in all cases, be provided for them. In determining the nature of the employment, much must be left to the judgment of the medical man, and still more to the taste of the individual. Mere amusement, however it may please for the moment, will not answer for a continuance; it palls in the enjoyment, and the mind necessarily pants after that active and industrious exertion of its faculties which is the original condition of its existence.

The same holds equally true at a later period, when, the disease having developed itself by unequivocal signs, a change of climate comes to be considered, with the view of arresting its progress. I believe that far too much attention has been bestowed upon the mere atmospheric conditions involved in this measure, and far too little on the accidental circumstances associated with it. Every one must admit, that after all the study which has been bestowed upon the subject of climate, very little information of a satisfactory nature has been obtained. We find some writers recommending a moist climate for the invalid, some a dry one, some a moderately warm, and others a moderately cold one; while in almost all these places, if accurate information could be had, the frequency of the disease would, probably, be found to differ very little from what exists at home. I am very far from wishing to discourage a change of climate in the early stages of consumption; I believe that it is often attended with striking and decided benefit, but I am anxious to call attention to the *adjvantia* and *lædientia* inseparable from it. Among the former may very frequently be enumerated, removal from unpleasant circumstances, or the want of suitable society at home; the excitement of visiting foreign countries, with their peculiar manners and habits; new associations formed on the journey; and

the opportunities of mental improvement in various ways. On the other hand, it must not be forgotten there are drawbacks in the separation of the individual from his family and friends; the inconvenience arising from the want of many comforts to which he may have been accustomed; the accidental circumstance of his meeting with companions of a congenial disposition with his own; the absence of all taste for the attractions which the countries visited may present: these, and many other circumstances, contribute materially to counteract all the advantages that the best-selected climate can possibly afford.

I knew one young gentleman brought up to mercantile business, and destitute of those resources within himself which spring from a liberal education, who went abroad for change of air when labouring under consumption. Though most amiable in disposition, he was little else than a walking vegetable; he took no pleasure in reading or in the improvement of his mind. Even the passing topics of the day seemed to have no attraction for him. All his enjoyment seemed to be centred in his family. Fortunately for him, his mother and sisters were able to accompany him, as otherwise I have very little doubt that the fatal issue would have been accelerated rather than retarded by the removal.

The following cases illustrate the opposite view of this question. They are those of two brothers, whose mother died of the complaint. The elder I did not see previously to his departure for Italy, but I have little doubt, from the medical treatment abroad, that he really laboured under the disease. He was a young man of cultivated mind, of an ardent temperament, and considerable ability. During his residence on the Continent, he occupied himself, not only in seeing the lions of the several places he visited, as tourists usually do, but he took sketches of the scenery, and copied the details of many of the models of architecture for which the Roman capital is so celebrated; a circumstance that has proved of immense advantage to him in the profession of an engineer, which he has

adopted since his return. Of his brother I can speak more decidedly. In addition to the predisposition which he inherited from his mother, evidenced in his thin figure, clear blue eyes, and great height, in proportion to his age, he had distinct physical evidences of the formation and softening of tubercular matter at the apex of his right lung. This I had ascertained at midsummer, a few years ago, as he was preparing to enter the University. At my suggestion, his studies were abandoned, and the family removed to the County Wicklow, where, in addition to the mildness of the air, he enjoyed the opportunity of boating on the sea in company with some young persons of his own age. All this had a most marked and beneficial effect upon his system, and, though he retained many symptoms of delicacy, all the signs of tubercular excavation disappeared. In the autumn of that year, his brothers got an engagement as engineers to a projected railroad in Spain, and they proposed to him to accompany them, and they would give him employment. The offer was cordially accepted; he entered with alacrity into the duties of his new office, and was soon able to endure a degree of fatigue which he could not previously have attempted; and even to wade through rivers without changing his clothes, and without the slightest subsequent ill effect. He has, since then, returned to this country in perfect health, and has remained well ever since. I am aware that it may be said the beneficial result experienced in his case was due to the change of climate solely, and not to the mere circumstance of his having procured congenial employment; but from inquiries that I have made from him, I have reason to believe that Spain, especially that part of it where he was stationed, is anything but favourable to the consumptive invalid; the natives frequently fall victims to the disease; and the weather is exceedingly trying to a delicate constitution.

I now leave this subject to the candid consideration of every reflecting physician; merely remarking, that it appears

to me to place the treatment of this intractable malady in a different point of view from that which has been generally entertained, as also to suggest a probable explanation of what is otherwise unaccountable, namely, the occasional success of certain remedies in particular cases, and their frequent failure afterwards in other instances, similar, as far as symptoms and physical disorganization are concerned.

The admission of this principle is not, it is true, calculated to make the treatment of any case more easy to the practitioner; on the contrary, it will tax all his resources to the utmost, both in discovering the nature of the adverse circumstances in which the patient is placed, and in directing the best mode of counteracting them. In many cases it is absolutely impossible for human skill to "minister to a mind diseased," and in all it is extremely difficult; but if there be any truth in what has been advanced in this essay, the attempt ought most certainly to be made; and even when our best efforts may prove unsuccessful, a recognition of the principle itself will give us juster ideas of the value of the *medical* means resorted to than we should otherwise be enabled to form.

ART. III.—*On the Mental Disorders of Pregnancy and Child-bed.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A., Hon. Fellow of the King and Queen's College of Physicians, &c. &c.

I HAVE no intention, in the present Essay, of entering upon the subject of insanity generally, or the inquiry as to whether it is owing to bodily derangement alone, as some have maintained, or whether the mind itself may not, in some instances, be disordered. Without attempting the solution of the problem, it is sufficient that we admit that man is a compound being, with the inter-dependance of mind and matter so finely adjusted, that, so long as the balance is preserved, the action of the machine is as perfect in its nature as wonderful in its results.

But the very nicety of this balance, the very intimate and accurate relation between the body, or especially the brain, and the mental development, appears occasionally to lead to the disturbance of the latter. The cords are so fine and so tense that an excess of vibration in the one extremity induces discord in the other.

If this be the case with men, who are possessed naturally of a firm and vigorous constitution,—if a very slight deviation from bodily health distorts or upturns their mental operations, how much more exposed must women be to such disturbances, who, in addition to the causes common to both, possess a more delicate organization, more refined sensibilities, more exquisite perceptions, and are, moreover, the subjects of repeated constitutional changes and developments of a magnitude and importance unknown to the other sex.

These functions are, menstruation, conception and pregnancy, parturition and childbed, and lactation. That functions of such great consequence, involving changes so enormous in their results, and yet so delicate in their minute details, should exert an influence upon the mind of the female, cannot be a matter of surprise, and a little inquiry will show us that the mental condition does correspond to these changes by an increased sensitiveness and by a greater liability to disturbance; and further, that this disturbance may amount to incoherent action or insanity.

Contrast for a moment the mind of a young girl before and after puberty. Previously to that event, it is the mind of a child, merry, thoughtless, volatile; occupied with childish trifles, delighted with toys; playing with her brothers, and differing from them mainly in some little feminine tastes, and in being less boisterous.

After menstruation, a great and rapid change is evident; womanly tastes and womanly feelings have sprung into existence; thought, feeling, and reflection are substituted for her former levity; her expressions are more refined, more reserved,

and indicating deeper sentiment; her affections are warmer yet more finely tempered; her pursuits are more elevated, her tone of mind more serious. Occasionally she is sad without cause, and her sympathy for sorrow and distress is more deep and earnest; even her joy, though less buoyant, is more intense, and her tastes are finer and more delicate. In short, under the influence of bodily development, her mind has expanded, and, from a lively merry girl, she has been transformed into a woman(a).

Now, from this susceptibility of the nervous system, this mental sensitiveness, the step to morbid excess of it is but slight, and the gradations very easily traced. The pensiveness may degenerate into sadness and melancholy, especially under the influence of any moral cause; or a disturbance of the bodily functions may itself excite the morbid mental condition. Hysteria and analogous nervous affections are nearly allied to more serious mental disorders(b).

Dr. Haslam observes: "Insanity and epilepsy are often connected with menstruation, and suffer an exacerbation of their paroxysms, at the period when the discharge happens or ought to happen;" and he gives a case, of which he says that "the insanity of M. M. was connected with her menstruation; after its cessation she recovered, although she had been confined for more than sixteen years"(c).

Dr. Spurzheim remarks: "Many delicate premature females, of lively disposition, at the period of menstruation, or soon after, by imperceptible degrees, lose the manifestations of the mind; they become inactive, and neglect those objects and pursuits which formerly were to them sources of instruction and delight. They do not show the same attachment to their parents or friends; they are careless of reproof, and unfeeling to kindness; they are negligent in their dress, inattentive to

(a) Raciborski, *De la Puberté*, p. 103.

(b) Laycock on Nervous Diseases of Women, p. 551.

(c) On Madness and Melancholy, pp. 215, 232.

personal cleanliness, and finish with a general apathy and idiotism"(a).

Dr. Burrowes says: "Everybody of the least experience must be sensible of the influence of menstruation upon the operations of the mind. It is, in truth, the moral and physical barometer of the female constitution"(b).

"Some females," observes Dr. Pritchard, "at the period of the catamenia, undergo a considerable degree of nervous excitement; morbid dispositions of mind are displayed by them at these times, a wayward and capricious temper, excitability in the feelings, moroseness in the disposition, a proneness to quarrel with their dearest relatives, and sometimes a dejection of mind approaching to melancholia"(c).

That menstrual disorders, particularly amenorrhœa, are frequently coincident with insanity, is admitted by all writers, some, however, maintaining that they are causes, others that they are effects. Dr. Burrowes takes the latter view, but in one of his cases the reverse was the case. Dr. Pritchard observes: "Sudden suppressions of the catamenia are frequently followed by diseases of the nervous system of various kinds. Females exposed to cold, undergoing powerful excitement, experience a suppression of the catamenia, followed, in some instances, immediately by fits of epilepsy or hysteria, the attacks of which are so sudden as to illustrate the connexion of cause and effect. In attacks of madness the catamenia are, for the most part, wholly or partially suppressed during the early periods, and in many cases it is not easy to say whether the suppression is the effect or the cause of the disease. We have already alluded to the case of a young female, mentioned by M. Esquirol, who suddenly exclaimed that she was cured of her disorder; her catamenia had flowed spontaneously, and her restoration to sanity was the immediate consequence"(d).

(a) On Insanity, p. 162.

(b) Commentaries on Insanity, p. 146.

(c) On Insanity, p. 207.

(d) Ibid. p. 207.

The observations of M. Foville fully confirm the statements of Dr. Pritchard(a), and I find that in a table of 235 cases of dementia by M. Esquirol, fifteen are stated to be from disorders connected with menstruation, and thirty-five connected with the critical age. He has also remarked that madness is more frequent in proportion among women under 20 than above 50.

I saw a case lately illustrating the point in question. It was that of a young lady, aged 17, who had menstruated regularly for a year or thereabouts, but in whom the discharge had been suddenly arrested without apparent cause. She complained of headach for a few days, and then it ceased; her pulse was perfectly natural and her appetite pretty good, but her mind gradually became clouded, and, at length, the prey of the deepest melancholy; she regarded herself as a castaway, spoke of her doom as fixed for ever in misery, and became completely insane. Neither medicine nor change of air and scene did her any good, and her friends were reluctantly obliged to think of placing her in confinement, when the menses suddenly re-appeared, after eight or ten months' absence, and she immediately recovered her mental health.

A curious case came under the observation of Mr. Speedy and myself some time ago. A servant-girl, aged 17 or 18, was sent to live in a lone house near Howth, where the only person she saw was a policeman. She had previously been irregular, and was much depressed. On returning home she was unwell, and talked nonsense, and her mother, supposing that she had fever, sent her to Cork-street hospital; thence she was dismissed as not having fever. On coming out she declared to a clergyman that she was pregnant and going to miscarry. We took her into the Western Lying-in Hospital, but could find no evidence of pregnancy, but enough of congestion, and probably of inflammation of the brain, for which we treated her,

(a) *Dict. Med. et de Chirurg. Prat.*, vol. i. p. 521.

and of which she died. On *post mortem* examination, not only was she not pregnant, but, so far as we could judge from the state of the organs of generation, she was a virgin. Her pregnancy was insanity. The late Dr. Hunt related a similar case to me.

Connected with menstruation and its derangements, as I have already mentioned, is the protean disorder which we call hysteria, and this, as Dr. Burrowes observes, will sometimes degenerate into mania: "Nervous, susceptible women, between puberty and thirty years of age, and clearly the single more so than the married, are more frequently visited by hysteria, and such constitutions have always a greater aptitude to strong mental emotions, which on repetition will superinduce mental derangement, and perhaps epilepsy"(a).

"The critical period," according to the same author, "as it is called, when menstruation ceases, is certainly favourable to the development of mental aberration. The whole economy of the constitution, at that epoch, again undergoes a revolution. The moral character, at the age when the menses naturally cease, is much changed from what it was on their first access; and every care or anxiety produces a more depressing and permanent impression on the mind"(b). Dr. Haslam refers to several cases of insanity which ceased at the critical period.

I may add that the deviation from mental health in women, even when the intellectual faculties are plainly disordered, is generally caused through the affections or moral qualities, and in this they differ from men under similar circumstances.

No one, I am sure, will suppose that I mean to assert the necessary or frequent connexion between menstruation and insanity, but merely their occasional combination; neither do I pretend to explain it; the fact is as I have stated, and it is of practical importance to remember that the changes of character

(a) *Commentaries on Insanity*, p. 192. (b) *Ibid.* p. 192.

and the mental development are dependent upon the bodily functions called into existence at puberty.

But this inter-dependance of mind and bodily functions is more remarkably exhibited during the next great development in the female economy. The sensibilities expanded by puberty are heightened during pregnancy, and not unfrequently more or less disturbed. The increase of local organic action is accompanied by general nervous irritability, which shows itself in various modes and degrees. Few women are quite as self-possessed, or in as even spirits, during pregnancy as at other times; little things annoy them; trifles depress them; or it may be that they are just as inordinately excited, displaying a degree of caprice or levity foreign to their character. Sometimes the most sweet-tempered become irritable, cross, and quarrelsome. The husband of a patient of mine told me that the earliest symptom of pregnancy in his wife, who was remarkably good-tempered and attached to him, was a disposition to quarrel with himself especially.

Dr. Montgomery mentions the case of a lady who, for the first two or three months of pregnancy was so irritable that, "to use her own words, she was a perfect nuisance in the house." He also relates one of an opposite character. "A gentleman lately informed me that being afflicted with a stepmother, naturally more disposed to practise the *fortiter in re* than to adopt the *suaviter in modo*, he and all the household had learned from experience to hail with joyful anticipations the lady's pregnancy, as a period when clouds and storms were immediately exchanged for sunshine and quietness"(a).

In a late volume of Guy's Hospital Reports Dr. Lever relates the case of a lady who was two months pregnant, and who, from having been the life of the household, light-hearted and gay, "now sat wherever she was placed, neither turning her head

(a) On the Signs of Pregnancy, &c., pp. 18, 19.

nor her eyes to one side or the other: she was a living automaton; her movements were automatic; there was life, it is true, but there was no mind; her chiselled face seemed cut in alabaster”(a). She recovered after her confinement.

Dr. Burrowes observes, that “ whenever mental disturbance occurs during pregnancy, it partakes oftener of an idiopathic character, either in the form of mania or melancholia, than of the delirium which succeeds parturition.” “ I have seen,” he adds, “ two cases where hysterical symptoms attended during pregnancy, and the patient almost immediately on delivery became insane”(b).

It is very natural that with a known or unknown amount of suffering before them, and with a certain but unknown degree of danger connected with the termination of pregnancy, women should occasionally at least be subject to depression of spirits, and should take a gloomy view of their prospects. With the majority this state of mind is only occasional, or is dissipated as gestation advances, but it is not always so; with some it increases, and they constantly and steadily anticipate evil, and are either deeply distressed or apathetically despairing.

As Dr. Montgomery has observed, this state of mind is often accompanied, or perhaps caused, by bodily derangement: the stomach and bowels are out of order, the patient complains of headach and nausea, with a foul tongue, quick pulse, and a bilious tinge of the skin. Proper treatment will generally relieve both the bodily disorder and mental depression in these cases. “ Sometimes this state appears to depend upon some peculiar condition of the brain, the nature of which we probably cannot appreciate, and which our treatment will but too often fail to correct: in one strongly marked instance of this kind, which was some time ago under my care, the lady

(a) Vol. v. p. 22, second series. (b) Commentaries on Insanity, p. 364.

became maniacal on the fifth day after delivery, and continued deranged for many months"(a).

A similar case is related by Dr. Haslam(b).

Some years ago I attended a lady in her first confinement, who had nursed a relative who died of hemorrhage during labour. This made a deep and fearful impression upon her mind, and from the moment she found herself pregnant, she had settled that she should die of hemorrhage during her labour: she had reconciled her mind to it; dismissed all doubts, and I may say fear also; and, regarding it as certain, she arranged all her affairs and her household, so as to give her husband as little trouble in his affliction as possible, and then when labour commenced she watched every pain for the final issue. The labour terminated favourably, but, before this consummation, her fears had completely overmastered her reason, and she became delirious for about an hour, after which she recovered.

But these inequalities of temper, and temporary depressions of spirits, are but a step towards more serious mental derangement. In more susceptible females the mind is occasionally completely thrown off its balance, and the patient becomes partially or wholly insane.

Esquirol mentions the case of a young woman of a sensitive habit who had an attack of madness in two successive pregnancies, commencing immediately after conception and lasting fifteen days. Several women at La Salpêtrière were there for insanity connected with pregnancy.

Dr. Montgomery states that he knew a lady who was attacked with insanity in eight successive pregnancies, and another who was similarly affected three times soon after conception, and remained so until within a short time of her labour, when she became sane, and remained so until her next pregnancy(c).

(a) Montgomery, *Signs of Pregnancy*, p. 20.

(b) *On Insanity*, p. 235.

(c) *Signs of Pregnancy*, p. 21.

On the other hand, pregnancy occasionally relieves mental derangement. Goubelly gives a remarkable case of a lady who was of sound mind only during gestation; and the well-known case of Mrs. Durant was one of this kind. I lately saw a case of confirmed melancholia in a lady which disappeared entirely on her becoming pregnant.

Generally speaking, these attacks come on gradually, continue for a time, and disappear before or after delivery, without any peculiar danger either from the malady or from the want of rational self-control on the part of the patient. It is not always so, however. Not very long ago a very distressing instance to the contrary occurred. A lady, pregnant but in perfect health, was employed in some household duty, and was talking cheerfully to her husband and sister; suddenly and without any particular reason, she left them and went to her bedroom and instantly destroyed herself. This must have been a sudden attack of insanity, for up to the moment she was cheerful and happy, in good circumstances, and greatly attached to her husband; but other members of her family had been subject to insanity.

In pregnant women there is occasionally a special but very melancholy cause of mental derangement, in addition to the physical condition common to all. I allude to some absorbing mental distress, such, for instance, as a profligate or cruel husband, or, more effective still, an accusing conscience. I may say, with Dr. Montgomery, "how deplorable must be the condition of mind in a woman, who, led astray by the profligate from virtue's paths of pleasantness and peace, and then abandoned, is compelled to consider her pregnancy a curse instead of a blessing, and has, in addition to the ordinary troubles of that state, to bear up against the agony of disappointed hopes, of affections misplaced and cruelly abused, to endure the present scorn of society, and the apprehensions of a still increasing shame, for which she is to

find no 'sweet oblivious antidote' of power 'to pluck from the memory a rooted sorrow,' or, 'raze out the written troubles of the brain'?" (a) How often has such a state of mind been followed by convulsions, or, ending in insanity (b), has armed, with the weapon of suicide the once gentle hand of her, who, to use the words of William Hunter, "might have been an affectionate and faithful wife, a virtuous and honoured mother through a long and happy life; and, probably, that very reflection raised the last pang of despair which hurried her into eternity."

According to Esquirol, the moral causes of insanity, in pregnant and puerperal women, are to the physical as 4 to 1; and of ninety-two cases reported by him, twenty-nine were unmarried women.

Again, it has been remarked by most writers, that women affected with any degree of mental derangement during pregnancy are more disposed than others to puerperal mania. But the serious character of these attacks is even deepened by the fact, abundantly established, that the evil is not limited to the mother. Not only may organic diseases of the body be transmitted to the infant, but a predisposition to insanity, thus multiplying the distress in a most alarming ratio.

I need not say that we have no means of minutely explaining the causes of these attacks; we may say, with Dr. Pritchard, that, "if we consider the frequent changes or disturbances occurring in the balance of the circulation from the varying and quickly succeeding processes which are carried on in the system during and soon after the periods of pregnancy and childbirth, we shall be at no loss to discover the circumstances under which a susceptible constitution is likely to suffer. The conversions or successive changes in the temporary local determinations of blood which the constitution, under such circum-

(a) *Signs of Pregnancy*, p. 22.

(b) Lever, in *Guy's Hospital Reports*, vol. v. p. 23, second series.

stances, sustains and requires, appear sufficiently to account for the morbid susceptibility of the brain"(a).

But let us now inquire what practical inferences we can draw from the sketch I have here given:

1. We have seen that the mental disturbance may exist in various degrees, from mere caprice or obliquity of temper up to actual insanity, and that the various shades are separated by no very defined line, but run into one another even in the same case. These caprices and melancholy anticipations are not to be treated with ridicule or indifference, still less are variations in temper, however unpleasant, to be met with a similar spirit of irritability; but the patient should be treated with a mixture of reasoning and patient kindness, soothed, and cheered, and strengthened. Nor should higher considerations be omitted; the forebodings of evil and the depression arising from fear are best relieved by a reference to the wisdom and fatherly kindness of Him "in whose hand are the issues of life."

2. This soothing and encouraging kindness is nearly all that we can do in those cases where there is no tangible bodily illness; but where there is any degree of feverishness or head-ach, immediate attention should be paid to the state of the digestive system and the bowels. It is possible that it may be necessary to abstract a little blood, but such cases are rare.

3. With patients suffering even slightly, in the way I have described, great care should be taken to avoid sudden or powerful mental emotion; all frightful or depressing stories should be prohibited, and all tragic representations, &c. Dr. Montgomery has recorded instances in which mischief was done in this way. The evil may be felt by the offspring even if the mother escape. Premature birth, death, or imbecility of the child, may be the result of fright to the mother.

4. Dr. Burrowes observes, that insanity during pregnancy

(a) On Insanity, p. 312.

is occasionally owing to adventitious causes, such as the suppression of cutaneous eruptions, discharges and drains of different kinds. In such cases he advises us to use the means most likely to reproduce them.

Great watchfulness must be employed in all such cases, lest the patient should attempt to injure herself, but we must take care that our object is concealed from her.

The next modification of mental disturbance which I shall notice occurs during labour, and had been described by no author until Dr. Montgomery published his paper in this Journal in the year 1834(*a*). Dr. Burrowes mentions "a temporary delirium often accompanying difficult labours," but that is all he says of the affection, and no allusion is made to it by any previous author.

The delirium in question is very temporary, lasting but a few minutes in some cases, half an hour in others. "It comes on suddenly during perfectly natural and favourable labour," about the time when the dilatation of the os uteri is at its maximum, and the suffering the most severe. "It is not accompanied by any other unpleasant or suspicious symptom, occurring perhaps immediately after the patient has been talking cheerfully, and, having lasted a few minutes, disappears, leaving her perfectly collected, and returns no more, even though the subsequent part of the labour should be slower and more painful. In every instance which came under my observation, the patients were afterwards conscious that they had been wandering, and occasionally apologised for anything they might have said, although they were not aware of what the exact nature of their observations might have been."

I have seen several cases of this kind, and, with one exception, they corresponded very accurately with this description of Dr. Montgomery's. In one case the delirium, which occurred first during the dilatation of the os uteri, returned

as the head was passing through the os externum; and this patient informed me that she was conscious of talking nonsense, and had in vain endeavoured to resist it. Dr. Montgomery attributes this momentary incoherence to the suffering attendant upon the forcible distension and dilatation of the cervix, and there can be no doubt, I think, that this is the true explanation.

I shall now proceed to the consideration of *puerperal mania*, or that form of insanity which occurs in childbed soon after delivery, or at the commencement of suckling.

It is a very distressing malady in itself, but doubly so from occurring at a moment ordinarily so joyful; and yet we cannot be surprised at the susceptibility manifested at this particular time, when we remember that "the sexual system in women is a set of organs which are in action only during half the natural life of the individual, and even during this half they are in action only at intervals. During these intervals of action they diffuse an unusual excitement throughout the nervous system: witness the hysteric affections of puberty, the nervous susceptibility which occurs during every menstrual period, the nervous affections of breeding, and the nervous susceptibility of lying-in women"(a).

Attacks of puerperal insanity are not infrequent. Esquirol states that of 600 women in La Salpêtrière, fifty-two were of this kind; and of 1119 cases admitted in four years, ninety-two were cases of puerperal mania. He found it even more frequent in proportion among the higher ranks, for out of 144 cases of mental derangement in females of opulent families, the attack came on during childbed or lactation in twenty-one.

Dr. Haslam states, that of 1644 females in Bethlem Hospital, eighty-four were cases of this kind; and Dr. Rush mentions five cases in seventy at the Philadelphia Lunatic Asylum.

The attack may, in some few cases, be a continuance or a

(a) Gooch on the more important Diseases of Women, &c., p. 127.

further development of the nervous affections of pregnancy; the nearer the approach to mental derangement during this period, the greater the probability of an attack after delivery.

There are two periods, however, at which patients seem especially obnoxious to it:—1st, immediately after delivery, to which the term *paraphrosyne puerperarum* has been given; and 2ndly, about the fourth or fifth day, when the full secretion of milk is established, and then it has been termed *mania lactea*. Dr. Burrowes adds a third period, about the fourteenth or fifteenth day, and he then attributes it to the effect of cold in checking the secretion of the milk.

I find that of Esquirol's cases sixteen became delirious from the first to the fourth day; twenty-one from the first to the fifteenth day; seventeen from the sixteenth to the sixtieth day; nineteen from the sixtieth day to the twelfth month; and nineteen after forced or voluntary weaning.

Of Dr. Burrowes' cases, in thirty-three the access was before the fourteenth day; in eleven, after the fourteenth and before the twenty-eighth day.

The premonitory symptoms vary a good deal. In one sense hereditary predisposition, or the nervous affections of gestation, are premonitory, but in most cases we shall generally find, previously to an attack, a degree of exhaustion, conjoined with great excitability, headach, and want of sleep: or the attack may accompany or follow convulsions, as I have seen in more than one case. Dr. Haslam remarks: "The first symptoms of the approach of this disease after delivery are, want of sleep, the countenance becomes flushed, a constrictive pain is often felt in the head, the eyes assume a morbid lustre, and wildly glance at objects in rapid succession; the milk is afterwards secreted in less quantity, and when the mind becomes more violently disordered it is totally suppressed."

Writers speak of various species of puerperal insanity, principally of two, however,—those cases in which the form is melancholia or mania, and those in which phrenitis or inflammation

of the membranes of the brain exists; the former is the true puerperal mania, and may be distinguished into two varieties, —those where fever is present, and those in which it is absent.

“Mania,” says Dr. William Hunter, “is not an uncommon appearance in the course of the month, but of that species from which they generally recover. *When out of their senses, attended with fever, like paraphrenitis, they will, in all probability, die;* but when without fever, it is not fatal, though it (i. e. the fever) generally takes place before they get well. I have had several private patients, and have been called in where a great number of stimulating medicines and blisters have been administered; but they have gone on at another time talking nonsense until the disease has gone off, and they have become sensible. It is a species of madness they generally recover from, but I know of nothing of any singular service in it.” “Putting together,” says Dr. Gooch, “this statement of Dr. Hunter, with my own experience, I extract from it the following meaning: that there are two forms of puerperal mania, the one attended by fever, or at least—the most important part of it—a rapid pulse; the other accompanied by a very moderate disturbance of the circulation; that the latter cases, which are by far the most numerous, recover; that the former generally die. This agrees closely with my own experience.”

Dr. Burrowes states that he has not seen any case attended with fever, “except when coincident with the first secretion of the milk, or where inflammation of the breasts or other parts has occurred, or upon forced weaning, where there has been abundance of milk.” But this is far from being generally true. I saw two cases last year in which mania occurred before the secretion of milk, and yet the pulse was very quick, and the skin hot, with thirst, loaded tongue, &c.

In the one variety we find the attack preceded by wakefulness, excitability, headach, and after a while the mind is evidently astray; the patient may be joyous or melancholy, singing and talking incessantly, or obstinately silent, suspicious of every

one, fancying injuries and offences on the part of her husband or friends, and forgetful of her child.

The heat of the body may be slightly increased, that of the head is generally so, with a partial pain and a sense of pressure or tightness, throbbing in the temples, and noises in the ears. The skin is generally relaxed and moist, but discoloured; the face pale, the tongue whitish and loaded; the abdomen soft, and usually free from tenderness; the pulse weak and quiet; there is little, if any, sleep, and but little thirst; the bowels are torpid, and the stools unhealthy, often offensive.

In other cases we find the skin hotter, the pulse quick and small, the face often pale, sometimes flushed, the eyes red and vivid, and a delirium more resembling that of fever, with a brownish dry tongue, and sordes about the teeth.

Dr. Burrowes has described an attack of puerperal mania, somewhat different from the above, and resembling them. "In every instance, this variety has come on before the fourteenth day from delivery; it is preceded by pervigilium; the ideas are at first rapid and confused; images like those of dreams appear, and the delirium is soon confirmed by these illusions being considered as realities, and the speech and actions corresponding with these impressions. The muscular powers are rarely violently exerted, though the patient frequently attempts getting out of bed, without any fixed object; on the contrary, she generally lies supine; the countenance is rather vacant; the eyes are half-closed, or fixed on vacuity, and, when roused, follow some imaginary object; the tunica conjunctiva is often highly injected, and the pupils very little sensible to light; the head is hot; the skin soft and relaxed, and partial sweating about the throat and neck. She continually mutters incoherently; loses consciousness, except when suddenly or strongly urged; if spoken to, answers shortly, and perhaps rationally, but lapses directly into the former state of indifference; the pulse is quick and uncertain; bowels generally easily moved; lochia and secretion of milk suspended.

About the fourth or fifth day the debility is greater ; there is more coma ; the pulse is quicker, smaller, and more unequal, with slight subsultus ; picking at surrounding objects, or the bed-clothes ; averse from food or drink ; insensible of evacuations ; the tongue throughout presents nearly a natural appearance, though sometimes tremulous when protruded. It is usually fatal by the seventh or eighth day ; and if the patient survive, chronic insanity commonly supervenes, and melancholia oftener than mania" (a).

That active inflammation of the brain or its membranes may occur during childbed is beyond question, but as it is very rare, and does not strictly belong to the question of puerperal mania, I shall not at present enter upon its consideration.

Thus, then, we may have an attack of mania supervening upon delivery, or occurring about the fourth or fourteenth day, with or without precursory symptoms ; in two varieties the main distinction appears to be in the pulse,—in one it is quick, in the other natural ; the third variety resembles low fever. There are seldom any signs to indicate disease of the uterus, at the time, except that in all, the lochia and milk are diminished or suppressed. In all the varieties the stomach and bowels are much disordered. The character of the mania is not in any way peculiar to childbed.

The progress, duration, and termination, of the attack varies a good deal in different patients. Dr. Burrowes observes, that sometimes the slighter attacks which occur immediately after delivery will disappear under the operation of a smart purgative, and an opiate.

Of the ninety-two cases given by Esquirol fifty-five recovered : four recovered in the first month, seven in the second, six in the third, seven in the fourth, five in the fifth, nine in the sixth, fifteen between the sixth and twenty-fourth, two after two years. Of these thirty-eight recovered in the first

(a) Commentaries on Insanity, p. 371.

six months. Of thirty-seven cases given by Dr. Burrowes thirty-five recovered: nine recovered in the first month, five recovered in the second, five in the third, three in the fourth, two in the fifth, four in the sixth, one in the seventh, two in the eighth, one in the ninth, one in the twelfth, one in the fourteenth; and one in the twenty-fourth month. That is, twenty-eight recovered in the first six months. Of eighty cases by Dr. Haslam fifty recovered.

But it may continue much longer; of the cases described by Esquirol six died: one six months after delivery, one in a year, two after eighteen months, one in three years, and one in five years. In Dr. Burrowes' table, it is stated one recovered after two years, one after three years, two after four years, one after six, and one after seven years; but he states that he never met with one permanently fatuous from puerperal insanity.

Of Esquirol's ninety-two cases, six died, or one in fifteen. Of Dr. Haslam's eighty cases, fifty recovered. Of Dr. Burrowes' fifty-seven cases, ten died, or one in six: "Seven within twelve days of the access of delirium, two within seven weeks, and one after four months. Two of them had active uterine disease, and two others died of relapses after they had recovered from puerperal mania."

Thus we find that the number of cases that recover is very considerable: out of 229, 140 recovered, or more than one-half. Of ninety of those who recovered, sixty-six were cured within six months, and the remainder at irregular intervals up to two years. Some we find continued insane much longer, remaining so for four, five, six, and seven years.

But, on the other hand, a large proportion of deaths has sometimes occurred: one in fifteen at La Salpêtrière, and one in six among Dr. Burrowes' cases.

I do not think, however, that any statistics from a lunatic asylum can be taken as a correct standard of the mortality in puerperal mania, for patients are not sent there until the disease is more or less chronic; now a great number of those who

recover do so within a short time after confinement, as in two cases I witnessed lately, both of which recovered from the delirium within ten days. Among the better classes a patient would not be placed in an asylum until she had recovered from her confinement, and until the ordinary treatment had failed. On the other hand, death occurs in many cases within the month after childbed. "Mania," says Dr. Gooch, "soon after delivery, is more dangerous to life, than melancholia beginning several months afterwards."

Dr. Gooch states that none of his patients with a slow or moderately excited pulse died, whereas in the fatal cases the pulse was very rapid, though some with a rapid pulse recovered. In the two cases I have referred to the pulse was very rapid, yet both recovered.

"Nights passed in sleep, a pulse slower and firmer, even though the mind continue disordered, promise safety to life. On the contrary, incessant sleeplessness, a quick, weak, fluttering pulse, and all the symptoms of increasing exhaustion, portend a fatal termination, even though the condition of mind may be apparently improved. In the cases which I have seen terminate fatally the patient has died with symptoms of exhaustion, not with those of oppressed brain, excepting only one case(a)."

I shall now consider the *causes* of this distressing malady. There seems little doubt that in many cases (Dr. Burrowes says in half the number, or possibly more, and Dr. Gooch bears the same testimony) the predisposition is hereditary, and of course mental deviations during gestation render an attack of puerperal mania extremely probable. Sleeplessness, which so fearfully increases nervous irritability, seems a very general predisposing cause.

Among the exciting causes we find cold, irritation, irregularities of diet, distress of mind, sudden mental shocks, frights,

(a) Gooch on Diseases of Woman, p. 124.

disordered bowels, excessive secretion of milk, and constitutional irritation thence arising, &c.; or the attack may form a part of or follow convulsions, as in a case which came under my care not long since.

Great stress is laid upon moral causes by the French writers. Esquirol, as I have before mentioned, states their frequency, compared with the physical, as four to one; and Georget mentions that out of seventeen cases there were but two not proceeding from a direct moral cause. During the invasion of France in 1814-15, eleven out of fourteen cases were from terror. British writers do not attribute so large an influence to this cause.

As to the *proximate cause or pathology* it is not very easy to speak positively. I may allude to four different views on the subject: 1. From its occurring, in many cases immediately after delivery, some have attributed it to disease of the uterine system. Fabret mentions a case of cancer which excited mania. Dr. Briere has related a case of mania from inflammation of the womb. Dr. Cooke discovered disease of the womb in two cases of puerperal mania. Dr. Burrows mentions having seen abortion and mania, the result of inflammation of the womb, in two cases in which he was consulted; one died and the other recovered; and in two of the deaths in his table there was disease of the uterus, but, whether it preceded the mania or not does not appear. In one of the species of puerperal mania, described by Dr. Burns, he says, "the delirium is connected with the state of the uterus, particularly of the veins which are inflamed"^(a).

At a meeting of the Obstetrical Society of Dublin, Dr. Montgomery mentioned a case of puerperal mania in which the uterus and ovaries were found in a state of inflammation; and Dr. Hardy another, in which peritonitis existed, but was not suspected till after death. I have certainly seen uterine inflam-

(a) Midwifery, p. 619.

mation follow puerperal mania, but that it existed previously I cannot say: the usual symptoms were absent.

Still these cases, which are all I have been able to make out, form so very small a proportion to the cases in which there has been no disease of the womb, that without denying the condition of the uterine system is in some way connected with puerperal mania, it is clear we cannot attribute it solely to organic disease of that organ.

2. Other writers regard the disease as inflammation of the brain or its membranes. Now it is granted, of course, that such cases do occur, but they are rare; and it is contended that, in ordinary cases puerperal mania does not arise from inflammation, and the results of *post mortem* examination are in favour of the latter opinion. Burns, Campbell, Davis, Lee, and others, speak of it as a modification of phrenitis; Burrowes, Pritchard, Gooch, &c., as not being inflammatory. The latter distinguished observer thus gives the result of his experience: "In No. 1, the disease occurred in a pale lady, without any heat of skin, or much quickness of pulse, and was not relieved by loss of blood. In No. 3, it occurred in one whose constitution was drained and enfeebled by nursing. In No. 4, it occurred in a pale woman, habitually hysterical, subject to bear dead children, from want of power to afford them life for nine months. In No. 5, it occurred in one in whom, for urgent reasons, the circulation had been reduced to the lowest ebb consistent with life. In No. 7, in one who had been living very low for a week, with such marked symptoms of the irritation of debility that, at first sight, I thought it was the close of some disease that had been overlooked. It was speedily relieved, not by cupping and purging, but by the tranquillizing and sustaining power of opium. In No. 8, the disease was treated, though with all possible prudence and moderation, as an inflammatory state of the brain, by leeches, cupping, purging, and low diet; yet the patient died, not with symptoms of oppressed brain, but with those of exhaustion; and, on

examining the body, the whole venous system was found extraordinarily empty of blood. In No. 10, the patient fell as if shot, under the stroke of the lancet; and, on examining the head, there was found no effusion, and empty blood-vessels. In No. 11, the disease came on after puerperal convulsions (a disease generally, but not always, depending on cerebral congestion), and after one of those enormous bleedings commonly practised in these cases, and no morbid appearances were discovered, after death, in the brain. These cases, if fair specimens of puerperal insanity, lead straight to the conclusion that the disease is not one of congestion or inflammation, but one of excitement without power"(a).

Add to this, that Esquirol found no traces of cerebral inflammation upon most careful examination.

3. Dr. Marshall Hall believes that the disease "results, in general, from all the circumstances following parturition combined, but chiefly from the united influences of intestinal irritation and loss of blood." "I am persuaded," he adds, "that real puerperal phrenitis is comparatively a rare disease, that puerperal mania is seldom of an inflammatory character, and that it is especially to be treated by those measures which are suited to the mixed case of intestinal irritation and exhaustion"(b). That many cases occur in patients exhausted from some cause, the extract I have given from Dr. Gooch will prove, and that the stomach and bowels are disordered in most cases is recorded by almost all writers, so that we cannot deny that Dr. M. Hall's view has much to support it. Nevertheless it does not seem to express the whole truth, nor is the want easily supplied with any degree of precision.

4. The explanation of Dr. Gooch, which I have already quoted as to the peculiar nervous susceptibility induced by the organic changes consequent on impregnation and child-bearing, although I believe it to be correct, is necessarily vague; nor

(a) On Diseases of Women. p. 144. (b) On Diseases of Females, p. 251.

is the view of Dr. Ferriar more accurate. He says: "I am inclined to consider puerperal mania as a case of conversion. During gestation and after delivery, when the milk begins to flow, the balance of the circulation is so greatly disturbed as to be liable to much disorder from the application of any exciting cause. If, therefore, cold affecting the head, violent noises, want of sleep, or uneasy thoughts, distress a puerperal patient before the determination of blood to the breasts is regularly made, the impetus may be converted to the head, and produce either hysteria or insanity, according to its force or the exciting cause."

Perhaps it is best simply to enumerate shortly the elements which may concur to produce the attack. We have the nervous shock varying in degree, but always increasing the nervous irritability, the great vascular change, the disturbance of respiration and circulation, the exhaustion, and in many cases the loss of blood; this combination must necessarily leave the nervous system in a favourable state for the operation of the exciting causes I have enumerated, and the result is mania.

The treatment of puerperal mania is very simple as regards the materials, yet requiring calmness and judgment in their application.

1. Those who regard it as any modification of phrenitis, of course recommend blood-letting, with more or less liberality. Now, from what I have said as to the nature of the disease, it will be clear that for these cases it is inadmissible, or, if ever used, it must be with extraordinary caution, and by means of leeches, in cases where there is strength and quickness of pulse, and flushing of the head and face. I have, however, never found it advisable; and Esquirol, Haslam, Gooch, Burrowes, and Pritchard, are all opposed to it. The last-named author remarks: "If we consider that the greatest danger to be apprehended for patients labouring under puerperal madness arises from a state of extreme exhaustion, that many women die from this cause within a short interval from the commencement of

the disease, and that, if they survive this period, the healthy state of the mind is in most instances restored, it will be evident that our chief endeavours must be directed to the present support of life." "Blood-letting, as a general remedy for puerperal madness, is condemned by all practical writers, on whose judgment much reliance ought to be placed"(a).

2. When the stomach is overloaded, when indigestible food has been taken, or even for the purpose of lowering the pulse by the shock of vomiting, emetics have been found useful. They must, however, be used with caution when the face is pale, the skin cold, and the pulse quick and weak. Dr. Gooch prefers ipecacuanha to antimonials. Dr. Burrowes recommends nauseating doses of tartar emetic, with the saline mixture and digitalis, for the purpose of reducing the violence and fury of the patient; and Dr. Beatty informs me that he has derived great advantage from tartar emetic.

3. From the almost universally disordered state of the bowels, great relief is afforded by one or two brisk purgatives of calomel, followed by castor oil or Gregory's Powder. The stools are dark-coloured, and highly offensive; and in addition to the advantage of clearing out the bowels, purgatives act admirably as derivatives from the head.

4. After the bowels have been freed, the greatest benefit will be derived from narcotics. Denman prefers small and repeated doses of opiates, but Gooch, Burrowes, and Pritchard recommend full doses, and with this I concur: ten grains of Dover's Powder, twelve drops of black drop, or an equivalent of the other preparations of opium. If opium disagrees, hyoscyamus may be given; and should sleep be induced, repeated small doses may be administered; when the head is very hot, and face flushed, we should postpone the exhibition of opium, and we must guard against constipation.

5. The head may be shaved, and a cold lotion applied; if

(a) On Insanity, p. 313.

the delirium continue, a blister may be applied, but it is not generally necessary,

6. In protracted cases, or when the patient is exhausted, nourishing diet, broths, &c., and even tonics, must be allowed; ammonia, with cinchona; oil of turpentine, &c.

7. As uterine inflammation not uncommonly arises in the course of, or follows puerperal mania, a close watch should be kept for the earliest symptoms, and if they appear, calomel in small and repeated doses, or mercurial inunction, should be added to the other remedies, with such other local applications as may be deemed advisable.

8. It will be necessary to keep the most careful watch upon the patient; the nurse, who ought, if possible, to be one familiar with such attacks, should never leave the room; friends ought to be absolutely refused admission; the apartment kept slightly darkened, and the entire house perfectly quiet.

9. When the mania disappears and the patient is convalescent, a change of air and scene is most advisable.

ART. IV.—*Observations on Disjunction of the lower Epiphysis of the Humerus*. By ROBERT WILLIAM SMITH, M. D., M. R. I. A., F. R. C. S., Professor of Surgery in the University of Dublin, Surgeon to the Talbot General Dispensary, Secretary to the Pathological Society of Dublin, &c.

NOTHING can be of greater importance to the practical surgeon, when called upon for his opinion respecting the nature of injuries occurring in the neighbourhood of the larger articulations in early life, than an accurate acquaintance with the anatomy of the epiphyses of the long bones. Of the value of this department of anatomical knowledge, the student, generally speaking, is ignorant, and it is seldom that the lecturer draws his attention to it. The anatomical teacher describes with great, and frequently with tedious minuteness, everything relating to the skeleton of the *adult*, but usually passes over, either

lightly or altogether, the peculiarities which characterize the osseous system in the young subject.

And yet very little reflection is required to show, that unless the surgeon is familiar with the situation of the line of junction of the epiphysis with the shaft, unless he knows how much of the bone the former comprises, and what processes, &c., belong to the latter, he will be liable to great embarrassment in the diagnosis of injuries implicating the larger articulations in the earlier periods of life.

Upon a former occasion, I pointed out the error committed by Vidal (De Cassis), in supposing that the tuberosities of the humerus belonged, not to the epiphysis, but to the shaft of the bone; and showed that there was no difficulty in comprehending the occurrence of osseous union in cases of separation of the superior epiphysis of the humerus, inasmuch as it formed one body with the tuberosities, and was still connected to living tissues(a).

I shall now endeavour to demonstrate that a similar error has been committed with respect to the anatomy of the lower epiphysis of the humerus, and that those authors who have written upon the subject of injuries of the elbow-joint have confounded with each other two very different accidents, viz., fracture of the humerus immediately *above* the condyles, and disjunction of the inferior epiphysis of the same bone; they have omitted to describe the diagnostic signs of the latter injury, and the means by which we are to distinguish it from luxation of both bones of the fore-arm backwards at the elbow, evidently from being unacquainted with the simple anatomical fact, *that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone.*

So complete is this ignorance upon the part of M. Maligne (who has recently published upon the subject of fractures), that he has included separation of the lower epiphysis

(a) See Treatise on Fractures, &c., p. 202.

of the humerus among the *supra-condyloid fractures* of that bone. The evidence of the truth of this assertion is contained in the following passage:

“*Fractures sus-condyliennes de l’Humerus*.—Je désigne sous ce nom ce que Dupuytren appelait *fracture de l’extrémité inférieure de l’humérus*, afin d’établir plus de précision et d’exactitude dans le langage. C’est donc une solution de continuité qui sépare toute l’extrémité articulaire du corps de l’os, sans pénétrer dans la jointure ; et chez les enfants, qui y sont plus sujets que les adultes, il y a probablement, dans beaucoup de cas, une disjunction de l’épiphyse”(a).

M. Malgaigne would have acted wisely, had he made himself acquainted with the anatomy of the bone in the young subject, before he attempted to establish “PLUS DE précision et d’exactitude,” in the language employed by Dupuytren.

Having committed the great and fundamental mistake of including among the supra-condyloid fractures, fracture through the line of the epiphysis, it was difficult to avoid the equally glaring error of distinguishing these two injuries from luxation of the bones of the fore-arm backwards, by the same diagnostic sign ; here, however, he has only followed the example of other authors: “Quel que soit la saillie de l’olécrâne en arrière, elle ne jamais plus éloignée des tubérosités humérales que dans l’état naturel, s’il y a fracture ; elle l’est beaucoup s’il y a luxation”(b).

Precisely the same error has been committed by Vidal (De Cassis), who, having alluded to the close resemblance between dislocation of both bones of the fore-arm backwards and cases of separation of the lower extremity of the humerus, “soit par une fracture, soit par un décollement d’épiphyse,” then adds: “Dans la luxation, l’apophyse olécrâne a perdu ses rapports normaux avec les tubérosités que surmontent en

(a) *Traité des Fractures et des Luxations*, 1847, p. 542.

(b) *Loc. cit.* p. 544.

dedans et en dehors les surfaces articulaires inférieures de l'humérus; ces tubérosités restent sur la ligne représentant l'axe de l'humérus. Dans la fracture, ces saillies osseuses, situées en arrière de l'axe de l'humérus, conservent leurs rapports naturels avec l'olécrâne"(a).

In the article, "Abnormal Conditions of the Elbow-joint," published by Mr. Adams, in the *Cyclopædia of Anatomy*, the author has remarked, that when the humerus is fractured transversely, immediately above its condyles, *or, in young subjects through its lower epiphysis*, the phenomena which result in either case closely resemble those which accompany a luxation forwards of the inferior extremity of the bone; but that, in the case of fracture, *the deformity is not accompanied by any changes of the normal relations existing between the olecranon and the condyles*(b). Subsequently he adds: "The transverse fracture of the lower extremity of the humerus, *or a forcible separation of its lower epiphysis*, are accidents most liable to be confounded with luxation of both bones backwards; but, although the elbow projects much backwards, and there is a marked prominence in front, still the relative position of the condyles of the humerus and the olecranon process is not altered in the fracture, as they have already been described to be in the luxation"(c). Neither does Baron Dupuytren allude to the separation of the epiphysis as an accident distinct in its character from other fractures of the lower extremity of the humerus, or as being that form of injury which bears the greatest resemblance to dislocation backwards of the bones of the forearm; on the contrary, he applies the same description to all fractures occurring *immediately above the elbow-joint*, and distinguishes them all from luxation by the same diagnostic signs. He remarks that, whatever time may have elapsed after the

(a) *Traité de Pathologie Externe*, tom. ii. p. 109, par Aug. Vidal (De Cassis).

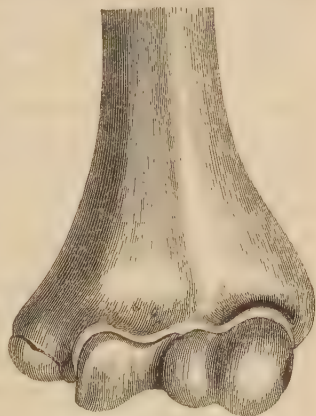
(b) *Cyclopædia of Anatomy and Physiology*, vol. ii. p. 68.

(c) *Op. cit.* p. 70.

receipt of the injury, there is an anatomical sign which appears to be infallible and “aussi sûr que l'anatomie”(a), viz.: whatever may be the prominence of the olecranon posteriorly, it is never further distant from the condyles of the humerus than in the normal condition of the parts, in the case of fracture, but that in dislocation the separation is very considerable.

The preceding extracts from the works of some of the most celebrated authors upon the subject of fractures, are, I should think, sufficient to show that disjunction of the lower epiphysis of the humerus (of which I find no particular mention made either by Boyer or Sir A. Cooper) is an accident which has hitherto been confounded with fracture immediately *above* the condyles, an error from which it may be inferred, I think, that the exact line of junction of the epiphysis with the shaft of the bone is not generally known to surgeons.

At all events, it is manifest that, by the authors from whose writings I have quoted, this line has been supposed to traverse the bone *above* the condyles; whereas the anatomical fact is, *that these processes belong exclusively to the shaft of the bone, and form no portion whatever of the epiphysis, which comprises nothing but the capitulum and the trochlea*. The line which marks its junction with the shaft is directed obliquely downwards and inwards, terminating below and external to the epicondyle, which, in the young subject, is distinct both from the epiphysis and from the shaft.



The lower articular surface of the humerus in the young skeleton differs from that of the adult bone in the following

(a) *Leçons Orales*, tom. iii. p. 399.

remarkable particular, namely, that the capitulum, or that portion which articulates with the head of the radius, is nearly double the size of the trochlea; so that the inferior surface of the former is nearly upon the same level as that of the latter process; and the humerus, when placed resting by its lower extremity upon a horizontal plane, assumes nearly a vertical position: in short, the radial is fully developed long before the ulnar portion of the epiphysis, and, as will hereafter appear, the knowledge of this fact is not destitute of practical importance in the diagnosis of that embarrassing accident, fracture through the line of junction of the epiphysis with the shaft, or, in other words, fracture of the humerus immediately *below* the condyles.

A description of the signs which characterize this lesion must also be, to a certain extent, an enumeration of those which accompany dislocation of both bones of the fore-arm backwards; many of the symptoms likewise belong to the transverse fracture, immediately *above* the condyles.

The injury usually results from a fall upon the elbow, but I have known it to occur from a fall upon the palm of the hand, the fore-arm being at the time extended upon the arm. The limb immediately becomes powerless, severe pain is experienced in the elbow, and the following signs present themselves:—The fore-arm is flexed, and the hand in a middle position between supination and pronation. The olecranon, drawn upwards and backwards by the triceps muscle, mounts above the level of the condyles of the humerus, these three processes forming the points of a triangle, the base of which is below. The antero-posterior diameter of the elbow is greatly increased, and the lower end of the humerus can be felt projecting in front. The application of a gentle force is usually sufficient to restore the normal appearances of the limb, but when the parts are abandoned to themselves the deformity soon recurs. If, after the removal of the displacement by extension, the fore-arm be rotated upon the humerus, or if the surgeon,

as recommended by Dupuytren, grasps the arm in one hand, and the fore-arm in the other, and then moves them backwards and forwards upon each other, the crepitus which characterizes fracture can generally be elicited. The motions of flexion and extension are exceedingly limited, and any attempt upon the part of the surgeon to communicate them produces severe pain.

The signs above enumerated are sufficient to demonstrate that the injury in question may readily be confounded with transverse fracture of the humerus above the condyles, or with luxation of the fore-arm backwards. The former would be a mistake of comparatively slight importance, inasmuch as the same treatment is applicable to both lesions; but the latter must be considered as a grievous error, the results of which are nearly as lamentable as those of leaving a true luxation of the joint unreduced. The observations of Dupuytren respecting the danger of confounding fracture immediately *above* the elbow with dislocation backwards, apply with peculiar force to the injury we are considering.

"If," says this distinguished surgeon, "the opinion that the case is one of luxation be acted upon, extension and counter-extension are employed, the reduction is accomplished without much difficulty, a roller is applied, and the surgeon congratulates himself upon the ease with which he has restored the bones to their places. But soon the displacement is reproduced, and at the end of a few days, in the midst of the swelling, something unnatural is felt. This accident is generally ascribed to the patient, who is charged with being intractable: the reduction is again effected, but the deformity soon recurs, and considerable swelling then supervenes. As long as this condition lasts, the surgeon continues secure; but when the swelling has disappeared, after the lapse of a few weeks, he discovers the error which he has committed, but the mischief cannot now be repaired, the motions of the joint are never perfectly regained, and the deformity is incurable."

As the loss of the normal relation between the olecranon and the condyles renders the separation of the epiphysis peculiarly liable to be confounded with dislocation of the fore-arm backwards, and as it is obviously a matter of the utmost importance to distinguish carefully between these accidents, let us now consider the signs, by availing ourselves of which we materially diminish the chance of mistaking it either for luxation, or for fracture above the condyles.

In case of fracture traversing the line of the epiphysis, the transverse diameter of the tumour which projects in front is equal to that of the opposite humerus, measured anteriorly from condyle to condyle; in this respect the accident resembles the dislocation of both bones backwards, but differs from fracture *above* the condyles. The outline of this osseous tumour is rounded, presents to the feel none of the irregularities or sharpness of an ordinary fracture, and upon its inferior surface, which is convex, and limited at either extremity by the condyles, neither trochlea nor capitulum can be distinguished.

When the joint is viewed posteriorly, two osseous prominences are seen, and can be distinctly felt; they are both placed above and behind the plane of the condyles, but are themselves situated (if the patient be not more than six or eight years of age) nearly upon the same level, the internal, however, being always a little higher up than the external. At a more advanced age the distance between these two prominences is observed to be greater, in consequence of the increased development of the internal, which is formed by the olecranon, the summit of which process grows by an epiphysis.

At no period of life, however, at which it is possible for the accident in question to happen, is the distance between the two projections nearly as great as it is always found to be between those which, in cases of luxation of both bones of the fore-arm backwards, constitute so marked a feature of the injury. In the latter accident the distance averages about one inch and a half, while in the former it is seldom more than three

quarters of an inch; the external tumour, in this case, being formed by the *capitulum of the humerus*, still surmounting the head of the radius, for which, in consequence of the concave form of its superior surface, it is extremely liable to be mistaken, if attention be not paid to the diagnostic sign which has just been mentioned.

For the history of the following case I am indebted to my friend, Dr. James S. Hughes, one of the surgeons of Jervis-street Hospital:

Michael Fleet, æt. 12, was admitted into Jervis-street Hospital on the 24th of August, 1847. He stated that whilst standing in the Fruit Market, a boy, running against him with great violence, threw him down, and that having, in the act of falling, stretched out his arm to save himself, the other boy fell with all his weight across the back of the extended limb. On his being raised from the ground, it was found that his arm was powerless, and he was at once brought to the hospital, where he was seen by Dr. Hughes, in twenty minutes after the occurrence of the accident, and consequently before the characteristic features of the injury had become obscured by swelling.

The fore-arm was semiflexed, and the hand in the position of half supination; the olecranon, which formed a remarkable projection, was placed above and behind the condyles of the humerus. A second osseous tumour, the upper surface of which was concave, and which was supposed at first to be the head of the radius, could be distinguished behind the outer condyle. The lower extremity of the humerus formed a considerable prominence in front.

Judging from these appearances, Dr. Hughes' first impression was, that he had to deal with a case of dislocation of both bones of the fore-arm backwards, but finding that the joint admitted of a much greater amount of flexion than can usually be communicated to it in such cases, he began to suspect the existence of a fracture. Extension was, therefore, made by an assistant,

while Dr. Hughes, grasping the arm with one hand, and the fore-arm with the other, moved them in opposite directions, and thus succeeded in producing a distinct crepitus. The diagnosis was therefore made, that the injury consisted in a fracture of the humerus through the line of junction of the epiphysis with the shaft, with displacement of the bones of the fore-arm, *along with the epiphysis*, upwards and backwards.

A moderate degree of extension and counter-extension was sufficient to remove the deformity; the limb was placed in the semiflexed position, and secured by angular splints and a roller. It was, however, found extremely difficult to prevent a recurrence of the deformity, and when the patient left the hospital, a slight degree of displacement still existed. Shortly after his dismissal I saw him, in consultation with Dr. Hughes and Dr. Power, and having made a very accurate examination of the limb, I came to the conclusion that the original injury had consisted in a simple disjunction of the epiphysis; for although the deformity was now not considerable, the principal characteristic features of this lesion, as they have been described in the preceding pages, could still be recognised. The boy had recovered very considerable use of the limb; he was able to extend the fore-arm perfectly, and could flex it beyond a right angle. The antero-posterior diameter of the joint was greater than that of the opposite side; the tendon of the triceps was in relief; the outline of the tumour which projected in front was rounded, but it was impossible to feel distinctly either the capitulum or the trochlea of the humerus. Two osseous tumours, formed by the olecranon and the capitulum, were seen posteriorly; but although they were still situated somewhat behind the plane, they were not now above the level of the condyles. The callus which had been effused, obscured, in some degree, the features of the injury. About this time the patient was also seen by Mr. Adams, who adopted the same views as to the nature of the accident.

From what has been stated in the preceding pages, it is

manifest that (contrary to what the statement of authors would lead us to infer) implicit reliance is not to be placed upon the loss of the normal relation between the olecranon and the condyles of the humerus, as a means of distinguishing between luxation of the fore-arm backwards, and fracture of the lower extremity of the humerus. It is evident that there is an accident of the elbow, in which the bones of the fore-arm lose their natural relations to the condyles, and yet that accident is not necessarily a dislocation, but may be a fracture through the line of the lower epiphysis of the humerus, which line is situated *below* the condyles.

The importance of being familiar with the anatomy of the epiphyses of the long bones need not therefore be again alluded to; I may, however, be permitted to remark, that it is also a matter of practical advantage to be acquainted with the periods at which the different epiphyses unite with the shafts of the bones to which they belong; for instance, the lower epiphysis of the humerus becomes identified with the shaft long before the superior: the separation of the latter by external violence may, therefore, occur at a period of life when the disjunction of the former would be impossible.

I shall terminate this brief notice of fracture through the line of the lower epiphysis of the humerus, by stating as concisely as possible the points of resemblance and dissimilarity between it and the two injuries with which it is most liable to be confounded, viz., fracture immediately *above* the condyles, and luxation of both bones of the fore-arm backwards.

The symptoms which belong to it in common with fracture above the condyles are the following:—shortening; crepitus; the removal of the deformity by extension, and its tendency to recur when the extending force is relaxed; the presence of an osseous tumour in front of the joint; the increase in the antero-posterior diameter of the elbow.

It differs from the supra-condyloid fracture in the greater transverse breadth and regular convex outline of the anterior

tumour; in the existence of two tumours posteriorly; in the loss of the normal relation of the olecranon to the condyles.

It resembles dislocation of both bones of the fore-arm backwards, in the following particulars:

The transverse diameter of the anterior tumour is the same in each case; so also is the antero-posterior breadth of the elbow; and in both the olecranon ascends above the condyles, the limb is shortened, and two osseous prominences can be distinguished posteriorly.

It differs, however, from luxation in the existence of crepitus, the tendency of the deformity to recur, in the anterior tumour being destitute of trochlea and capitulum, and in the circumstance of the two posterior tumours being nearly upon the same level.

ART. V.—*Cases of Thoracic Disease, with Remarks on some of the Difficulties which occasionally exist in the Diagnosis of Phthisis in its early Stage.* By THOMAS FITZPATRICK, M. D., Licentiate of the King and Queen's College of Physicians; formerly Physician to the Dublin General Dispensary.

It is the duty of the practising physician, who meets with cases remarkable for the obscurity of their symptoms, or rarity in their subsequent pathological appearances, to give a faithful record of them to the profession. Acting on this principle, I select from my note-book the following cases, and detail them in as brief a manner as is consistent with an accurate account of their leading features.

Miss —, aged 26, of dark complexion and delicate habit, without any hereditary predisposition to phthisis, and who had generally enjoyed good health, with the exception of having been subject to an eruption of lepra on the lower extremities two years before, came under my care, in September, 1836, for an attack of fever, in which the gastro-intestinal and bronchial mucous membranes were principally engaged;

she recovered under ordinary treatment, in about a fortnight, a slight cough only remaining, for which I directed her removal to the country. This patient again consulted me in the following November. During the interval her general health had been much improved, but the cough was not completely removed. A few days previous to my visit, after exposure to cold and damp, she was attacked with headach, restlessness, dyspnœa, and frequent cough, with copious expectoration of thin frothy mucus. The tongue was clean, bowels regular, pulse 95; the chest sounded clear on percussion, except over a space extending from the left clavicle to the inferior margin of the second rib, where it was decidedly dull; in this situation the respiration was feeble, and accompanied by a muco-crepitating râle; these phenomena were observed posteriorly over a space corresponding with that anteriorly; in the remaining portion of the left lung the respiration was pure, but more feeble than in the right lung, over the whole of which it had a puerile character, without any rhoncus: there was no evidence of any affection of the heart, nor did she complain of any pain in the chest. The antiphlogistic treatment, including local abstraction of blood, the use of tartar emetic, &c., was steadily employed, but without any relief of the symptoms, to which was now added the occasional appearance of dark-coloured blood, mixed with the sputa; subsequently counter-irritation on the chest was used, and a combination of blue pill and ipecacuanha administered so as slightly to affect the mouth.

In the course of December all the symptoms became aggravated; the cough frequent, with severe dyspnœa, occasionally amounting to orthopnœa; the physical signs presented the same character as already described, but in a more marked degree, the râle now approaching the character of gargouillement; bronchial respiration was not observable over the site of dulness. The expectoration became more profuse, being upwards of a pint in the day; it was more tenacious than in the early stage of the disease, and bore a great resemblance to raw

white of egg. On the 30th of December the report is as follows: remarkable emaciation; face pallid; got but little sleep in the night, being unable to lie down; cough frequent and dyspnœa very distressing, particularly increased when the patient attempted to lie on her right side; the left cheek and side of the neck extending to the clavicle are œdematous, this symptom not being observed in any other part of the body; no complaint of pain is made; tongue white and moist; bowels confined; pulse 105, regular and compressible. She was ordered a purgative, a pill consisting of digitalis, squill, ipecacuanha, and blue pill, was administered every six hours, and a blister was applied to the chest; by these remedies the œdema was entirely removed, but without improvement in the other symptoms. Early in January a consultation was held, and the compound iron mixture with laurel water was ordered, also a syrup containing muriate of morphia, to relieve the cough. These remedies were exhibited for two days, and then discontinued, as under their use the symptoms of the disease became much aggravated and the fever was increased. Having taken measures to moderate the latter, I ordered a few days subsequently a draught consisting of one grain of iodide of potassium, and eight drops of tincture of digitalis in an ounce of cinnamon water, to be taken three times a day.

The effect of this treatment was most surprising; in a few days a marked amelioration in her state was observable, and the dose of the iodide having been gradually increased, the patient was in about a month restored to perfect health. In a month afterwards, I examined the chest; the dulness on percussion was removed, but the respiration in the upper portion of the left lung was more feeble than natural, and particularly so as compared with that in the right.

On the 9th of the following July I was again called to see this patient. She had been at a party a few nights before, and, after dancing, and leaving a heated room, was exposed to cold and rain. The symptoms, which were those of bronchitis,

confined to the left lung, did not yield to ordinary treatment, and in a few days the general symptoms and physical signs, as before described, were fully developed, and the patient became sensible "that her old complaint had returned." It is unnecessary to describe minutely the progress of the case; let it suffice to say, that cough, dyspnœa, and profuse expectoration, as before, were the prominent symptoms. The fever was of the adynamic character, and at no time presented the features of pure hectic. The dulness under the left clavicle increased, and the muco-crepitating râle returned; œdema commenced in the left side of the face and neck, and extended to the left arm, and, subsequently, general anasarca was established. About a fortnight before her death large spots, resembling purpura hæmorrhagica, appeared on the extremities, and, worn out by cough, orthopnœa, and debility, she died on the 22nd of the following November. I obtained a *post mortem* examination thirty-six hours after death, and was assisted by my friend Mr. Hamilton; but I regret it was, of necessity, not as minute as was desirable in so interesting a case, being merely confined to an examination of the cavity of the thorax. The right lung was collapsed and healthy in appearance; the left lung was prominent, and the superior two-thirds presented a dark purple appearance, the remaining third being rather of a dark red colour. There was no foreign deposit or hepatization in either lung. Some effusion was found in the left pleura. On making a section of the left lung, a sero-sanguineous fluid escaped at innumerable points. The lung had a remarkable greasy feel; its natural crepitation was in some degree diminished; it did not sink in water, but, by comparison with a portion of the right lung, its specific gravity was evidently increased. The bronchial mucous membrane appeared softer than natural, and presented small distinct spots of ecchymosis. The heart and great vessels were healthy.

J. B., aged 35, of spare habit, but muscular, enjoyed good

health till the month of August, when, after exposure to cold, he was attacked with slight rigors, headache, dyspnœa, and cough. About this period, an old and extensive ulceration on the leg, which had been discharging for a long period, healed; and although he was relieved of the most prominent symptoms by treatment, he continued subject to slight cough, dyspnœa, and general debility. On the 30th of November, when he first came under my notice, he presented the following symptoms:—Countenance pale, anxious, and emaciated; tongue white, and moist; he complains of general weakness, dyspnœa, and inability to lie on the left side; he has an occasional cough, with moderate expectoration of mucus. He denies the existence of hectic symptoms. On percussion the chest is resonant, except under the left clavicle, where it is dull; the dulness extends below the first rib, and is more marked towards the sternum than the axilla. The respiration is healthy over the whole of the right lung; at the upper portion of the left it is feeble; in approaching the base of the lung the respiration is observed to have more of the natural character. Action of heart natural; pulse 108, and small. During the months of December and January all his symptoms were gradually aggravated, he lost flesh rapidly, the dulness under the left clavicle increased, and he complained of a remarkable soreness in this situation, which amounted to severe pain when percussion was employed. The feebleness of respiration in the upper part of the left lung became more marked, and a slight mucous râle was observed in this situation. The character of the expectoration varied, being at one time opaque and dark-coloured, at another, slightly puriform, but it never was completely puriform. In the middle of January œdema was observed on the left side of the face, neck, and thorax. The pulse averaged about 120, the cough increased in frequency, the dyspnœa became most distressing, and he died early in February, all treatment having failed to procure any alleviation of his sufferings.

Post Mortem Appearances.—The right lung was healthy, and neither in it nor the left were there any tubercles or other foreign deposit. The upper part of the left lung was in a state of condensation, from the pressure of a tumour which was situated in the posterior mediastinum; it was encephaloid in character, and intimately connected with the bronchial glands, which had coalesced, and formed a small ring round the trachea; while the tumour bulged out on the left side to the size of a small orange. The heart and great vessels were healthy, and also the abdominal viscera, with the exception of the liver, in which a tumour similar to that in the mediastinum, but of a firmer consistence, was found.

These cases suggest some points of interest in relation to diagnosis, but, before alluding to this part of the subject, it may be well to investigate the nature of the pathological condition of the left lung, in the first case. It appears to me to occupy a place between the acute congestion described by Fournet, and the blue pneumonia noticed by Dr. Corrigan. Its principal characters belong more to congestion than to inflammation. One question of interest is, was there any analogy between it and the disease of the skin, from which the patient had previously suffered. Mr. Addison, in a paper published in the eleventh volume of the Transactions of the Provincial Medical and Surgical Association, observes, "that there is no distinction whatever between the spots of lepra in the skin and tubercles in the lungs, if we except the difference arising from the different situations of the two tissues." The essential character of both diseases he believes "to be an abnormal accumulation of epithelium-cells, which produce more injury in the lungs than on the skin, on account of the delicacy, vascularity, and functional importance of the former, and also because the accumulation cannot readily be discharged." I have quoted this passage merely to show that an analogy has been already drawn between lepra and disease of the lungs; for I think that, in researches as to the morbid alterations in

tissues, due regard should be paid to the diathesis of the patient, because microscopic observations alone cannot explain their variations. I believe that in the present case the most correct view to take is, to consider the disease of the same character as that described by Fournet, but in a chronic form.

With regard to the second case my observations shall be brief, as the subject of intra-thoracic tumours has, of late years, received much elucidation, particularly from the valuable contributions of the late Dr. Greene. It is chiefly remarkable, from the absence of some of the principal symptoms observed in cases of thoracic tumours, but which can be easily accounted for, as the growth of the tumour being towards the lung, it produced no marked influence on the trachea or œsophagus.

We now come to the investigation of one of the most important questions arising from the consideration of these cases. Supposing two other cases similar in character to come under observation, do we possess the means of forming a diagnosis between them? or could we decide in their early stage on the non-existence of tubercular development?

Let us pause to reflect on the symptoms and signs common to both; some degree of fever, emaciation, dyspnœa, cough and expectoration, partial œdema, dulness on percussion under the clavicle, and circumscribed muco-crepitating râle. Here we have many of the general symptoms and signs of phthisis. In the advanced stage, however, we have not the hectic fever, marked acceleration of pulse, and puriform expectoration, as in ordinary phthisis; while the absence of flattening of the side of the thorax, and of bronchial respiration, contra-indicates the existence of cirrhosis.

As the opinion that phthisis is not merely a disease of the lungs has many supporters, it would appear the safest course to consider that the general symptoms ought to have the most marked influence on our diagnosis, for, notwithstanding the researches of late investigators, the discovery of phthisis in

the earliest stage is still beset with doubts and difficulties, and we often find that too nice an appreciation of deviations from normal functions, leading to an unfavourable prognosis, has insured an after-triumph to some empiric, or other pretender to medical art. The doctrines of Fournet, in relation to this subject, are too abstruse in character; his attempt to determine the intensity, duration, and quality of the pulmonary sound, necessarily failed. Increased expiration can only be regarded as an adjunct to the diagnosis of phthisis, and is not confined to the development of tubercles in the lungs.

It is but justice to this author to observe that he admits the physical signs he offers in aid of diagnosis, are not of general application, and even throws a doubt on their value, unless supported by general symptoms. Are we then to assume, that the observation of physical changes of the respiration, in the earlier stages of phthisis, are useless? By no means. Comparative observation, not only between each lung, but between different parts of the same lung, should never be neglected, and is often of the greatest value; but the important point which ought to be kept in view is, that our knowledge of the subject derived from physical examination is as yet imperfect, and *per se* unworthy of reliance in forming a prognosis.

The following case exemplifies the absence of any appreciable sign until an advanced period of the disease. A lady, aged 23, with light hair, delicate skin, florid complexion, and a marked hereditary predisposition to phthisis, came under my care in the spring of 1844. She presented the general symptoms of phthisis, but neither auscultation nor percussion could detect any abnormal condition of the lungs, with the exception of supplementary respiration at the upper portion of the left lung. This patient was, in two months, restored to health under ordinary treatment, including the application of a spirituous lotion to the chest, but in a manner somewhat different from that recommended by Dr. Marshall Hall. It had been previously suggested to me by Sir Henry Marsh, and, as I have found it of

great benefit in similar cases, I shall mention the mode of application. A piece of thin flannel is to be wrung out of boiling water and immediately immersed in a small quantity of spirit of wine containing some perfume, rapidly wrung again, and applied warm to the chest; it is to be carefully covered over with oil silk, and changed three or four times a day. In May, 1845, this patient was attacked with similar symptoms, but on this occasion she thought that the approaching fine weather and change of air would be sufficient remedies without medical aid. In the month of June I was hastily summoned to visit her, as she had been suddenly seized with profuse hemorrhage from the chest. General bleeding, &c., succeeded in arresting the hemorrhage, but its cessation was not accompanied by relief to the general symptoms. I was convinced tubercles existed in the left lung, but frequent examination, for about a month, failed to give any evidence from auscultation, more than exaggerated respiration in the upper portion of the left, and, in a less marked degree, the same phenomenon in the right lung. At length I observed dulness on percussion and bronchial respiration inferior and external to the left mamma; in this situation a large cavity was subsequently established, but it was not till near the close of the patient's existence that satisfactory signs of tubercular development in the upper part of the left lung were afforded.

I shall now mention a physical sign, from which, in conjunction with marked general symptoms, I formed, in two doubtful cases, a diagnosis of incipient phthisis. I bring it forward under the disadvantage of not having had an opportunity of testing the accuracy of the theory of its production by *post mortem* examination. Great difference of opinion exists as to the situation in which healthy bronchial respiration is usually observed. Fournet limits the seat of natural bronchial respiration to the interscapular region, as being the only part in which it is usually audible. Dr. Williams is of opinion, that, over a space extending one or two inches on each

side of the sternum, the respiration in the healthy state is of the bronchial character; while Dr. Walshe thinks it is confined to the surface over the upper part of the bone. I have investigated this point in many cases, particularly in examinations for life assurance, and I feel satisfied there can be no general law in relation to it, as far as regards the anterior part of the chest. In some persons, particularly those with well-developed chests, marked muscular fibre, and deposit of fat, the respiration, even under the upper part of the sternum, has not a bronchial character to the ear; while, in persons of spare habit, nervous temperament, imperfect muscular development, and narrow chests, this phenomenon is almost constantly observed under the second bone of the sternum, and confined to about one inch or less on each side of that bone. I have not found any difference in the extent of surface on each side from a central point on the bone, in which (in healthy persons) the bronchial character is preserved; and I regard a discrepancy from this law as affording evidence of an increased density of the lung, conveying to the ear the normal bronchial respiration, at a greater distance from the centre of the sternum on one side than the other. It is almost unnecessary to observe, that it is not to be confounded with the ordinary bronchial respiration frequently heard under the clavicle, in a stage of phthisis so advanced as to render the diagnosis comparatively easy, when it is accompanied by dulness on percussion. Besides it differs somewhat in character, being less harsh and tubular to the ear, and sometimes accompanied by ordinary vesicular respiration under the stethoscope.

The first case in which I observed this sign was one examined by me at the request of a friend, in consequence of its obscure character, the general symptoms of phthisis existing without the presence of physical signs. The chest was everywhere resonant on percussion; but I observed bronchial respiration over a greater surface to the left of the sternum than ordinary; on placing the stethoscope over the corresponding

part on the right side, the respiration was vesicular, and measurement demonstrated that the bronchial character of respiration extended nearly an inch more to the left than the right of the sternum. I therefore concluded that tubercles were developed in the centre and sternal extremity of the lung, either so diffused or so insufficient in quantity as not to cause dulness on percussion, yet capable of acting as the medium of conveying bronchial respiration to the ear. I consequently made the diagnosis of phthisis. I lost sight of this patient at the time, but learned that she died of that disease, in the country, a few months afterwards.

The second case was under my own care. Dulness on percussion, with ordinary bronchial respiration, succeeded the sign. Cavernous respiration was ultimately established, and the patient died from well-marked phthisis, but I could not prevail on his friends to permit a *post mortem* examination.

I have been latterly anxious to find an additional case presenting this character of bronchial respiration, but have only so far succeeded as to meet with one which, although bearing an analogy, was not an example. It was that of a lady labouring under synovitis of the hip-joint, who had a slightly elevated tumour, in size about a square inch, beneath the clavicle, and close to the sternum. Under the site of this tumour there was a marked difference in the pulmonary sound. Dr. Stokes, who saw this case with me, considered the sound as circumscribed, puerile respiration; and an interesting question arose, whether the tumour caused any alteration in the lung, or merely served as a conducting agent in impressing the ear with exaggerated respiration. The patient has not, since that time, now some months ago, exhibited any symptom of disease in the chest.

In alluding, in this hurried manner, to some of the difficulties which surround the investigation of incipient phthisis, my object is to stimulate others to extended observation. There can be no doubt of the interest and importance of the subject. How many mistakes in diagnosis occur? How de-

ficient are our therapeutic means to oppose the progress of this awful disease?

He who shall discover unerring tests of early tubercular development in the lungs, and give us confidence in our prognosis, who shall teach us the use of appropriate remedies and when to hope for benefit from treatment, will deserve to be ranked among those whose names are identified with honour to medical science and utility to mankind.

ART. VI.—*On some of the Forms of Paralysis which occur in early Life.* By HENRY KENNEDY, M. R. I. A., Fellow of the King's and Queen's College of Physicians in Ireland, Temporary Physician to the Cork-street Hospital.

IN the following essay I wish to direct attention briefly to some of the forms of paralysis met with in infants and young persons. Eight years ago a few remarks were published by me on this subject, which happening to attract some notice at home and abroad, induced me to pay more attention to it since then than I might otherwise have done. Previously to that time the subject had been noticed in the most cursory way, and I believe only in the work of Underwood. Since then it has been taken up by Dr. West in his admirable series of lectures; also in the elaborate work on the Diseases of Children, by Rilliet and Barthez; and by M'Corinac, Todd, Copeland, and others. It still, however, presents a wide and open field, and in again bringing it under notice, I shall merely premise that I am not about to speak of the paralysis met with in new-born infants, and usually arising from congestion; this part of the subject has been already most ably handled by Dr. Evory Kennedy, and subsequently by Dr. Doherty, now Professor of Midwifery in Galway. The following remarks, then, apply to infants at the breast and to young persons up to the age of fifteen, presupposing that they are not affected with any organic disease.

Paralysis, in early life, exhibits itself to our notice under

different forms, and it is essentially necessary that these should be distinguished from each other. The first, and what, in the strictest sense of the term, may be called temporary paralysis, is of tolerably frequent occurrence. It is met with in infants usually between the age of five and nine months; but it occurs at both an earlier and later period than this. It is remarkable for the suddenness of its invasion, and, as far as I have seen, for the fact, that it is most common in healthy, well-thriven children. An infant, to all appearance in the best health, will be put to bed, and on awaking it is observed that it has lost the power of moving a limb. Generally only a single extremity is so affected, and it is more common for the arm to be so than the leg; though possibly this may be explained by supposing that the lower extremity may be paralysed, and yet not attract notice, on account of the age of the infant. Though we have not the word of the child for it, there can be little doubt that the limb is really paralysed. The mother or nurse observes that it is not moved as it previously was, and that no inducement or excitement stimulates the child to move it. If the arm be held up, and then let go, it will drop to the side, precisely as a discharged electrometer would do; and what is really curious is, that there is a sort of expression conveyed, which can scarcely be overlooked. I am somewhat at a loss to explain this, but if any one will call to mind a state of blindness, when, to all appearance, nothing is wrong with the eyes, he will get an idea of what is meant.

In these cases I have not been able to detect any difference in the temperature of the two limbs; though it must be added that this point has not been ascertained in the only way in which such should be done, that is, by the thermometer.

Similar remarks to those just made on the arm apply also to the leg; of course making allowance for the different office it performs. If the child have begun to put the limbs under it, it is now observed that one of them is useless, and that it drags, as it were, in a way precisely analogous to what is seen in the

adult: or if it have been previously creeping about, the infant appears to take on a sedateness of character. In this state the limb may be freely handled, without the child appearing to mind it. But this is not always the case, for now and then pain is superadded, and this constitutes a second phase of the disease. When it occurs, the sensibility of the part is wonderfully increased and the child does not allow the limb to be touched. Under these circumstances it occasionally happens that the limb is contracted, and kept up close to the body; and indeed unless we knew that a precisely similar state is seen in the adult, it might be fairly questioned whether such a state was one of paralysis at all. It is worthy of notice that the state of contraction may follow that of paralysis, or the latter may follow the state of contraction. The following case was an example of the last of these forms.

CASE I.—A boy of three and a half years old, a perfect model in shape, became affected in March, 1847, with lameness, but at first in a very slight degree. This was observed in the morning. As the day wore on, however, the lameness increased, and before evening the left leg had become so painful that the child lay on a sofa, constantly crying. In this state the leg was drawn up close to the body, and any attempt to touch it appeared to give great pain, which, as well as I could ascertain, was referred to the knee. The child was slightly feverish, the skin being somewhat hot, and the tongue furred. The bowels too were confined. A warm bath and some aperient medicine were directed. The little patient was scarcely put into the former before the pain was lessened, and on being taken out he immediately fell asleep, and continued so during the night, without having got any of the medicine directed. On awaking in the morning the pain recurred, and he now got the aperient ordered the evening before, and which had to be repeated before it acted. It was obvious the bowels had been much confined. A second bath afforded another night's rest, though not so good as the first; and the following morning,

that is the third of the attack, all pain seemed to have ceased; but it was now found that the limb was paralysed: the child, however, allowing it to be freely handled, and moved in any direction. In this state he lay two days on a sofa, without the slightest apparent wish to move. On the third, by dint of coaxing, and the promise of a plaything, he was induced to put the limb under him. In this way he walked lame for a day or two, and so the attack passed off. The tongue all through remained furred, and, as soon as the severe pain ceased, the child had some slight appetite.

This was a well-marked example of one of the forms of paralysis now under consideration. It will be observed that the first thing noticed about the child was the occurrence of lameness; this was shortly followed by a state of contraction of the limb, attended, at the same time, with exquisite sensibility; and this again was succeeded by a paralytic state. As far as I have observed, a state of paralysis of the same part very commonly follows one of severe pain. Thus, after acute rheumatism has subsided, it is by no means uncommon for the patient to complain of a loss of power; and the same may be seen in cases of phlegmasia dolens, where a weak state of the limb often remains long after every other symptom of the disease has subsided. So I take it to have been in the case detailed. The child had suffered severely, and this state was followed by one of paralysis. It is scarcely necessary to observe that in the adult it is common to meet with cases of spastic rigidity of the arm, which are often attended with great sensibility of the part,—a state which may be either congenital, or else dependent upon incurable organic disease; and indeed a very analogous state of things may often be observed towards the end of many cases of hydrocephalus. The next case affords an example of paralysis under a somewhat different aspect.

CASE II.—A healthy-looking child of fourteen months old, and still at the breast, was brought to St. Thomas' Dispensary in March, 1844. The mother said that the child had lost the

power of moving the left upper extremity, and she suspected the person who had charge of it of having given the arm some hurt. On examination nothing wrong could be detected; the arm could be moved in any direction, and though the child cried, it appeared to me that this was more owing to fright than anything else. Otherwise the arm remained hanging by the side, and though the child was ready to grasp my watch with the right hand, I could not induce it to do so with the left. The child, I have said, appeared healthy; it had its full complement of teeth, had cut them without any unusual pain, and the mother said the bowels were free. Under these circumstances a few alterative powders were directed, as also a bath, which was to be repeated; and when I next saw the child, two days after, all the symptoms of paralysis had disappeared.

Though several other instances of this affection could be brought forward, the two given appear to me quite sufficient to illustrate the particular form of disease now under consideration, and which I may venture to call the temporary paralysis of early life; for I have not yet met any instance where it was permanent, or indeed lasted longer than the ninth day.

The causes of this affection would appear to be usually some irritation in the bowels, or else that arising from teething; for it is certain that between the fifth and the ninth month is the most frequent period to meet with it. It appears to me, too, extremely probable, that it is often caused by the child lying on the limb while in the cradle; and the fact that the paralysis is, frequently at least, observed for the first time on taking the child up, would go some way in bearing out this opinion. It is now well known that this cause is quite sufficient to induce paralysis, and in my former essay two cases were given, where the affection, arising in this way, and in spite of every treatment that was adopted, became permanent.

On the diagnosis of this affection it is unnecessary to dwell; there is scarcely a possibility of mistaking it for any other. I

have scarcely seen any instance of this disease in which some one or other was not blamed for having injured the part, and so caused the paralysis; and, in truth, there is nothing more common than for the medical man to be consulted on this very point, and it is one for which he should be prepared. That an injury might be inflicted, which would give rise to pain, and this, in its turn, to paralysis, is not by any means impossible. I can only say that no instance of the sort has as yet come under my notice. When it is said that the diagnosis is sufficiently plain, it must not be understood that there are no other affections with which this one may be confounded. I have seen instances where it was difficult to distinguish between the form of paralysis I have been speaking of, and commencing disease of the hip-joint. When real disease does exist, however, it will be found usually to have been much slower in its progress; its onset will, as a general rule, have been preceded by marked derangement of the general health, which, together with some enlargement of the glands of the groin, heat about the parts, and pain when pressure is communicated to the head of the bone, suffices to distinguish the paralytic affection from the more serious disease.

The prognosis of this form of paralysis is favourable. No instance has as yet come under my notice, where the duration of the disease exceeded ten days, and in general they got well in about half that time. When the cause of the paralysis, however, has been owing to pressure exercised on the limb, much more caution in giving an opinion will be requisite, for then the affection may be permanent.

Nor is it necessary to dwell long on the treatment. The paralysis appears to me to be more commonly dependent on disordered bowels than any other single cause. It has been already stated, that healthy children are most subject to the affection, and in such confined bowels are very apt to exist. In other instances, however, the discharges, without being confined, are unhealthy in their character, the tongue, too,

being often found coated. We will, of course, be guided in our treatment, as one or the other state predominates, by giving either aperients or alteratives. With these the warm bath appears to be particularly useful, and the more so if pain happens to exist with the paralysis. In other instances, again, but these the rarest, the irritation produced by teething seems to be the cause of the affection, and the gums will then require our attention. Cases occur, too, and I have seen such, where no apparent cause can be made out. In these, I believe, we shall not go astray in putting the child on the use of mild alteratives, of which the grey powder will be found to be one of the best. When three or four days have elapsed from the commencement of the attack, it is always useful to endeavour to make the child exert itself. This may be done by a little coaxing, or by holding up some bright object, or by other ways unnecessary to particularize. I have found that this plan, simple as it may appear, hastens the recovery of the limb. Any other means that may be requisite will come under consideration farther on.

Such is the first form of paralysis to which I would call attention. I have been induced to bring it under notice a second time, because in the able work of Rilliet and Barthez it is observed that my first account of it was not as complete as it deserved to be. Probably what has been now stated may help to fill up the hiatus which exists in the clinical history of this particular affection.

Of the second form of paralysis, which I am about to describe, I have seen but two instances. Possibly some may think that these are not sufficient to constitute a distinct class; but as they presented some points of interest I have thought them worthy of at least a separate notice. The following is a brief account of the two cases:

CASE III.—A girl six years of age was brought to me labouring under paralysis. I found that seven months previously she had suffered from a very severe attack of scarlatina, from

which she had made a slow recovery. While she was still convalescent it was observed that she had lost the power of moving; and continuing so for some months without getting better, she was brought to me for advice. She gave me the idea of one not fully recovered from illness: she walked quite lame, and with a sort of shuffling gait; the right leg bending under her at each step, exactly like what is sometimes seen in the advanced, but cured stage of morbus coxæ. The right arm was in a similar condition, and the power of grasping very much less than with the opposite limb; while neither extremity had the firmness of those of the left side, and appeared to me to be colder likewise. The tongue too I thought was somewhat affected, as she did not seem to speak as plain as might be expected, but of this I am not positive. The hearing and sight were both perfect. Her appetite was bad, and there was marked derangement of the digestive organs, which was shown more particularly by a furred tongue. She had no symptoms of fever. She was directed to use the tepid shower-bath, followed by good rubbing, especially of the affected side of the body; and with this some alterative medicine was also ordered. It was, I think, the third time of her coming to me, when, on looking at her, I observed that she presented some symptoms of chorea, but in a very slight degree. There was a very trifling movement of the head, of a spasmodic character; and, in addition, the girl was unable to keep herself quiet for even a very short period. As a whole, however, it was slight, and almost required to be looked for, to ascertain its existence. In connexion with this state, I discovered a well-marked *bruit de soufflet* in the region of the heart. It occupied the first sound, and was very much localised.

After some five or six weeks, during which the treatment was carried out steadily, the paralysis began to improve. The only change made during this time was, that in place of internal medicine, she was ordered to rub in ten grains of mercu-

rial ointment nightly. Under this plan the symptoms slowly, but steadily, improved; the tongue became clean; and at the end of three months she had completely recovered the use of the side. The *bruit*, however, never altered; and, I presume, had its origin at the time she had the scarlatina.

CASE IV.(a).—A girl, between eight and nine years of age, was brought to St. Thomas' Dispensary, labouring under paralysis of the right side of the body. As in the last case she walked with a considerable limp, and every now and then the ankle was observed to yield inwards, as the weight of the body came to bear on the joint. The hand of the same side she could close with some firmness, but by no means so much so as the left. I could not detect any difference in the temperature, nor in the firmness of the flesh of the two sides of the body. This girl also presented, on close examination, very slight symptoms of chorea, particularly affecting the weak arm, and occasionally the head. The mother stated that the child had been affected in the way described for the two previous months, but she was unable to assign any cause for the attack. On closer examination nothing could be made out that would account for it. The bowels were in a healthy state; the tongue clean, though pale; the appetite moderate, and the pulse quiet. There was no *soufflet* in the region of the heart. As it was possible that the patient might have been affected with worms, she was, in the first instance, ordered a draught of oil and turpentine; this was followed by the alterative plan, as in the last case given, and this again by a course of tonics, consisting of hydriodate of potash and iron. Under this combined plan the patient recovered slowly; so much so, as at the end of about six weeks to be very nearly free from all signs of paralysis.

These two cases I have thought it well to give, because they are the only two I have seen in young persons, in which the disease assumed the form of hemiplegia, very like, indeed,

(a) For the opportunity of seeing this case I am indebted to the kindness of my friend Dr. Ferguson, of Gloucester-street.

to what is seen in the adult. Paraplegia is common enough, but ~~this~~ form is, I believe, very rare. It will be kept in mind that I am only speaking of cases where we have no evidence of the existence of organic disease. The union also in these cases of the paralysis with the chorea, though the latter was very slight, appears worth noting, for it tends to show that some sort of connexion exists between them, though at first sight it might appear strange that such a union should exist. The fact, however, really is, that as yet we know not the true physiology of the nervous system, and every one must have seen instances where, at the same time that there was an increased mobility of the nervous system, there was also an entire loss of its motive power. This may be seen in fevers, and there appears no reason why it may not also be met with in chronic disease. The contrary too may exist; that is, an increase of involuntary motive power, with a greatly lessened degree of sensibility(*a*). The two states may also be combined, as in the cases detailed; and in fact the "extremes here meet," as in other instances. The paralysis runs into the state of over-excitement, and the latter, in its turn, often ends in, or is combined with paralysis. The *soufflet* detected in the first case, and which, from its continuance, must be considered as depending on organic disease, is now well known to be a frequent attendant on, if not a direct exciting cause of chorea(*b*).

Before concluding these remarks, I would allude briefly to a form of paralysis which has been already ably treated of, more particularly by Dr. Graves(*c*), but which is also by no means of infrequent occurrence in early life, and therefore belongs to the part of the subject now under consideration. I allude to those forms of the disease which occur subsequent to fevers, no mat-

(*a*) As bearing on this subject I would refer to some valuable lectures, published in the Medical Gazette in 1848, by Dr. Todd of London.

(*b*) My readers are, I am sure, all aware of the highly interesting and important cases of pericarditis complicated with convulsive movements given by Bright, Latham, and others.

(*c*) Clinical Medicine, by Neligan, vol. i. : several of the lectures.

ter what type they may assume; though it is probably most usual to meet with them after gastric or infantile remittent fevers. Such cases are of tolerably frequent occurrence, and may be almost set down as forming a distinct group in themselves. As far as my experience yet goes, the paralysis in these cases is of a much more serious nature than any hitherto spoken of. In all the cases I have seen or known of, months have elapsed before the patient recovered; while in some the paralysis has been permanent. It would appear too that it is the lower extremities alone which almost invariably suffer; sometimes one, but more commonly the two(*a*); and it is where the fever has been of unusual duration that this casualty has been met with. Whether anything of organic disease exists in these cases, must be matter of doubt(*b*). My own impression is, as a general rule, that there is none, or at least none which art and time will not suffice to remove. The first time I met with a case of the sort occurred some years since, and it came upon me somewhat suddenly. The following is a mere outline of the case:

CASE V.—A girl, six years old, was attacked with feverish symptoms, during which she presented marked signs of stomach and intestinal derangement. The fever ran on most tediously for more than five weeks, at the end of which time the symptoms abated, and in the course of another week she was so well as to be allowed to leave her bed. Then it was, and only then, discovered, that she had lost the use of her lower limbs. They were flaccid to a degree, and failed her at once on any attempt being made to put them under her; nor indeed could she move them

(*a*) Paralysis of one lower extremity, following an attack of infantile fever, was the cause of the lameness from which the celebrated Sir Walter Scott suffered, and which became most distressing to him towards the close of his life.

(*b*) My friend Dr. Bellingham has published in a late Number of the Medical Press four interesting cases of paralysis in children. In one of these it appears to me that no organic disease existed, though this can be but matter of opinion.

in any posture; for it has been occasionally observed, and Dr. Graves notices the fact, that patients in this state may be able to move a limb, provided they be in the reclining position, but are totally unable to do so if placed upright(*f*). This child, however, could not move, no matter how she was placed. She remained in the state described for seven months, during which period her general health improved a good deal, but the paralysis could scarcely be said to have altered at all. At the end of this time, however, and by treatment to be spoken of again, she gradually recovered the use of the limbs. She is still, after some years, what would be considered a delicate girl.

Another instance, similar to the case just given, has occurred to me, in a girl aged 13, an hospital patient. But here the commencing fever was not so tedious, nor her recovery so slow, as in the case detailed. Both lower limbs were affected; but I do not think it necessary to refer to the case at greater length. It may be recollected, too, that one of the cases given by Dr. Graves occurred in a boy aged 14, who, from eating a quantity of nuts, first suffered from constipation, and was then attacked with tedious enteric fever, on recovering from which it was discovered that he had lost the use of the lower limbs. The sensation in this case was perfect, as it was also in the cases already given, and which came under my own notice. It is also to be observed that, in all the cases I have seen or known of, the paralysis was confined to the limbs, not affecting any of the abdominal or pelvic organs. This is probably an important point, and one on which the diagnosis of cases of this kind might entirely turn.

The cases of paralysis following gastro-enteric fever, which have been as yet alluded to, are comparatively simple. But

(*f*) As no explanation of this fact has been given, I would suggest the following, viz., that the circulation in the spine is different in the two cases; in other words, that there may be congestion when the patient is upright, which may lessen or go away entirely on his assuming the recumbent posture. One fact every person must have noticed, which is, that pain in the back is often relieved by simply making the person lie down.

it occasionally occurs that they may present much more complicated symptoms; nor can I refrain from giving here, at some length, the notes of a case, for which I am indebted to the kindness of Dr. Symes, of Kingstown. The patient himself I am well acquainted with.

CASE. VI.—A young gentleman aged 15, very intelligent, became affected, after ten days' indisposition, with feverish symptoms, marked, in a more than common degree, by irritability of the stomach, and pain even when very slight pressure was used. These symptoms began on the 2nd of September, and on the 25th of the same month he had completely lost the use of his legs; the irritability of the stomach, however, though it had at first lessened, again recurred, and he had got into the habit of throwing up everything he swallowed; not all at once, but mouthful by mouthful. Solids were longer retained than fluids, but anything he took was vomited. With these symptoms he complained of some pain in the spine. His spirits were good, and he was able to amuse himself occasionally. So matters went on till the 4th of October, when he was attacked with violent convulsions of the body and arms; but the lower limbs remained perfectly quiet. These attacks seemed to be more of the nature of hysteria than anything else; they were so severe, however, as to require several persons to hold him. When recovering from them he appeared to be quite unconscious of what had passed. They occurred commonly at night, during which time he had usually two, such as described. In this state he continued till the middle of October, when he was sent to Wales for change of air. Any measures hitherto tried to allay the vomiting, and the extreme sensibility which still existed over both the stomach and the spine, had but a temporary effect. Creasote was one of the most useful means tried, but it soon lost its power. After a fortnight's travelling in Wales, he returned much improved in every respect, except in the power of moving his limbs. He now generally, though not always, retained solid food on his stomach, but fluids were still vomited. He was somewhat

irritable, and any annoyance would bring on one of the convulsive attacks; but they were not so severe as at first. He was sent a second time to England, and returned at the end of December, still more improved, being both fatter and stronger; but he could not move in the slightest degree the paralysed limbs. In the beginning of February he was seen by Sir Philip Crampton, who fired him slightly down the spine, and repeated it after a few days. Very shortly after this the patient felt a glow of heat down the thighs and legs, and in a day or two later he discovered, to his delight, that he could stand. He soon regained the power of walking, his general health being gradually restored, with the exception of some slight returns, and these only occasionally, of the convulsive attacks.

This case appears to me one of peculiar interest, for here there was a union of paralysis, and at the same time an over-excited state of the nervous system; and both, to all appearance, at least, taking their origin in an irritable state of the gastric mucous membrane, accompanied by fever. The duration of the paralysis was very much the same in this instance as in the cases which have come under my own notice, that is, between six and eight months; and it is worthy of remark, that the use of the limbs seems to be fairly attributable to the form of counter-irritation which was used. This comparatively sudden recovery, I should state, is not uncommon in the class of cases now under consideration, and it is one for which we should be prepared. I have known it occur in another instance, where the patient was much longer deprived of the use of his limbs, and where very considerable atrophy existed(*a*); and it is one of the reasons which have led me to conclude that in such no organic disease is usually present, even though the paralytic state may have persisted for many months. Did my

(*a*) Hysterical females, it is well known, often present extraordinary phases of nervous disease, in which paralysis of a limb or other part of the body forms a prominent symptom, and where sudden recovery is of by no means an unfrequent occurrence. For proof of this I would refer to the work on Diseases of the Nervous System by Sir B. Brodie.

space allow of it, I might refer to the form of vomiting which occurred in this case, and which, I rather think, is an example of the disease which has been already so well described by Sir H. Marsh, under the title of "Regurgitation of the Food." But I must bring these lengthened remarks to a conclusion.

The foregoing observations and cases have been exclusively confined to some of the forms of paralysis met with in early life. But this has been done more for the sake of convenience than any thing else; for I am satisfied there is much less difference between the paralysis of early and more advanced life, than what might at first sight appear. The study of the disease, in young persons, however, appears to me capable of throwing much light on similar affections, occurring at a different period of life. For what, I would ask, is the conclusion which a consideration of all that has gone before must lead us to? Why, that as paralysis of a very serious character may occur in the young, and without any organic disease, so similar affections may be met with in the adult, and ought to be looked upon as such, and clearly discriminated from those where organic lesion is present. I am sure I have seen in the adult all the forms of paralysis which it has been my wish to describe as occurring in the young; and it appears more than probable that the tendency to connect serious nervous diseases, including paralysis, with actual lesion of the brain or spinal marrow, is even yet too strong; though we have the remarks of Graves, Stanley, Stokes, Hutton, Bright, Latham, and others, to prove the contrary. It is not long since, through the kindness of my friend, Dr. Shannon, I had an opportunity of examining two young epileptic patients, who died from the violence of the fits; and yet I was unable to detect anything in the brain or elsewhere which would account for the disease, or the fatal result, which latter, I need scarcely add, is not of common occurrence.

These remarks, however, would be of little value if they had not some tendency to enlarge our views on the subject of paralysis in general. It has been stated on another occa-

sion, and I would here repeat, that medicine cannot be studied on too wide principles. For every man's experience must daily afford him examples of cases of disease, in which nosology, with all its arrangements, is completely at fault, and where, consequently, we are driven to treat disease on general principles. Thus, to confine myself to one point, it is my firm conviction, that the study of paralytic affections, and their results, in early life, is quite capable of adding to our powers of treating similar affections in the adult. In other words, are we not too ready to give up the treatment of paralysed limbs, and look upon them as beyond the resources of art? We have seen that it is quite possible for young persons to recover from very serious attacks of paralysis; and though it would be unreasonable to look for the same amount of amendment in the adult, there appears to me no good grounds why it should not be attempted. This much I know, that weeks, or months, or years, will not justify us in pronouncing the case hopeless. (It is only of the purely paralytic state of a limb I am now speaking.) For, did space permit, I could detail instances where recovery has taken place after years had elapsed. It will not be supposed, from these remarks, that I possess any means of cure which are not equally known to all. What I wish to convey is this: that the means at our disposal, such as friction, exercise, electricity, counter-irritation, baths, &c., are capable of effecting cures, or at least great amendment, in cases which have been considered as beyond the reach of our art; but that, for this purpose, they must be carried out much longer and more perseveringly than is at present done. The only medicine I would notice, and which I believe is seldom used for this express purpose, is mercury in alterative doses. Its value I learned from the late Mr. Colles' last work; but, as is known, he pushed the mercury to salivation; and I believe more will be gained, in many cases, by what is regarded as the alterative action of the medicine, continued for a long time. Possibly, on some future occasion, an opportunity may offer of bringing this particular part of the subject more especially under notice.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Stricture of the Urethra, and Fistula in Perineo. By JAMES SYME, F.R.S.E., &c., &c. Edinburgh, Sutherland and Knox. 1849. 8vo. pp. 72.

Stricture of the Urethra, its Pathology and Treatment; comprising Observations on the Curative Powers of Potassa Fusa in that Disease; with Cases. By ROBERT WADE, F. R. C. S., &c., &c. Second Edition. London, Churchill. 1849. 8vo. pp. 247.

WHEN a metropolitan surgeon, of such high reputation as Mr. Syme has earned for himself, comes before his professional brethren with a new plan of treatment for a frequent and important disease, his proposal calls for serious consideration; and it is with this feeling that we have taken up Mr. Syme's essay on strictures of the urethra and fistulæ in perineo. In the preface he remarks,

“That the method of treating obstinate strictures of the urethra recommended in the following pages was communicated to the profession, five years ago, through the periodical press, and again, two years ago, in a collection of surgical essays; but, so far as I know, it has not as yet been adopted by others, even in a single instance. Being deeply impressed with the importance of the subject, I feel it my duty to make another attempt, with the view of awakening attention to it, by publishing, in a separate form, full details of the procedure, together with its advantages, positive and comparative; and also further evidence of its efficacy, from cases in public as well as private practice. Having done this, I leave the matter to the profession, trusting that, whatever may be their decision, they will at least give me credit for an earnest desire to render the opportunities committed to me conducive to the improvement of practical surgery.”

Mr. Syme commences his observations by remarking, that the occurrence in surgical practice of cases in which strictures of the urethra have existed for the greater part of a lifetime, notwithstanding the efforts to remove them by practitioners of the greatest skill and experience, evidently shows that the means of treatment hitherto employed must either be uncertain in their operation, or only temporary in their beneficial effect; and adds, that his object now is to explain and recommend a method of treatment which has been found an effectual remedy for the disease, even in its most inveterate forms.

In referring to the obstinate cases of permeable stricture, in which his new mode of operation is recommended,—for his observations do not at all apply to what are called, and, as he says, improperly, impermeable strictures,—Mr. Syme says:

“I do not here allude so much to the mere tightness of contraction, and the difficulty consequently experienced in passing a small instrument through the stricture, as to the unyielding disposition manifested by the constricted canal, and its tendency to contract, perhaps even more closely than before, after being partially or completely dilated. One other feature of such obstinate cases, of great importance to notice, is the strong and general sympathy of the system with every change taking place in the local disease; when rigors and febrile attacks, leading to various derangements in different parts of the body, more or less connected with the part locally affected, are apt to result from attempts, even of the most gentle kind, to pass instruments into the bladder.”

The following is Mr. Syme's description of his operation:

“If the patient has a great deal of pain, and wishes to escape from the slight degree of it which attends the requisite incision, he should be placed under the influence of chloroform; not partially, so as merely to suspend his consciousness, or impede his recollection of suffering, but completely, so as to prevent any restlessness or unruly struggle, which would tend very seriously to increase the difficulty of the procedure. He should then be brought to the edge of his bed, and have his limbs supported by two assistants, one of them standing on each side. A grooved director, slightly curved, and small enough to pass readily through the stricture, is next introduced, and confided to one of the assistants. The surgeon, sitting, or kneeling on one knee, now makes an incision in the middle line of the perinæum or penis, wherever the stricture is seated. It should be about an inch, or an inch and a half, in length, and extend through the integuments, together with the subjacent textures, exterior to the urethra. The operator then, taking the handle of the director in his left, and the knife (which should be a small, straight bistoury) in his right hand, feels with his fore-finger, guarding the blade, for the di-

rector, and pushes the point into the groove behind, or on the bladder side of the stricture, runs the knife forward so as to divide the whole of the thickened texture at the contracted part of the canal, and withdraws the director. Finally a No. 7 or 8 silver catheter is introduced into the bladder, and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine.

"The patient has merely to remain quietly in bed for forty-eight hours, when the catheter should be withdrawn. The urine sometimes maintains its proper course from the first, but more frequently passes in part through the wound for some hours; no attention or interference is required on this account, but at the end of eight or ten days a moderate-sized bougie should be passed, and repeated once a week or fortnight, for two months."

Mr. Syme recommends the same perineal incision in cases of obstinate stricture, accompanied by fistulæ in perineo, and gives two cases treated in that way.

He details eleven cases of permeable stricture, which he treated by external incision, and says:

"That of all the cases in which I have divided the stricture, only one has been followed by any unpleasant result; on that occasion the patient suffered from a formidable attack of erysipelas, which, commencing in the perinæum, gradually extended over the whole surface of the body, accompanied by constitutional disturbance, so violent as to prove all but fatal, and productive of emaciation, with prostration of strength, to an extreme degree. During this illness, the wound, instead of healing as usual, remained open for several weeks, just as when first inflicted, and it retained its conical form after the process of granulating contraction began, so that when the cicatrization was at length completed, the urethra had a very thin covering at the seat of the aperture, which, therefore, was apt to open from time to time, and discharge a little urine. It may be added, that the combination of circumstances which gave rise to this untoward occurrence was so complicated and unusual that it can hardly by any possibility happen again."

Having reviewed the different methods hitherto proposed for the treatment of stricture of the urethra, Mr. Syme concludes the subject in the following manner:

"From what has been said in the foregoing pages, I trust it will appear established,

"First. That division of a stricture by external incision is sufficient for the complete remedy of the disease in its most inveterate and obstinate form.

"Second. That in cases of less obstinacy, but still requiring the frequent use of bougies, division is preferable to dilatation, as affording relief more speedily, permanently, and safely."

We confess that we were rather startled when we read the foregoing sweeping conclusions, at which Mr. Syme has arrived, in favour of the treatment of passable strictures of the urethra by external incision. That a free division of a cartilaginous stricture will enable the surgeon to pass a large-sized catheter on into the bladder, and thereby afford him an opportunity of finishing the treatment by dilatation, we at once admit; but we are at a loss to understand on what principle the mere longitudinal division of an adventitious texture, which very frequently surrounds the urethral canal, and the nature of which we know from experience to be that of having an extraordinary tendency to contract, can lead to a permanent cure. Mr. Syme says that no attention or interference is required, on account of the urine passing out through the wound for a few hours or days; but at the same time he states that at the end of eight or ten days a moderate-sized instrument should be passed, and repeated at intervals for two months; and, as if not quite satisfied himself as to the permanency of the cure by external incision, he says at p. 43:

“In most cases the cure may then be deemed complete and lasting; but if the tendency to contraction should have been extreme, or if the patient’s way of life should be such as to favour the reproduction of the stricture, it will be a prudent precaution to have the bougie passed four or five times in the course of a year, in order to avoid all risk of future trouble.”

We must say, after a very careful perusal of Mr. Syme’s essay, that we are far from being convinced of the advantages of the treatment by external incision over dilatation in cases of permeable stricture of the urethra; and as the *permanency* of the cure by the perineal incision is the great point on which Mr. Syme lays stress, we should have wished him to have followed out each case, so as to have proved the *remote* results of his operation; for, with the exception of two, all of his cases have been operated on within the year, many but a few months since; and his reports of the great bulk of his cases cease with their dismissal from hospital, or, in private practice, within a few days after the operation was performed. The following is a report of the last of Mr. Syme’s cases, which will give an idea of the summary manner in which the cases in general are dealt with, and which we conceive has left the boasted advantage of Mr. Syme’s treatment, viz., its permanency, unproved.

“CASE XI. — A. S. aged 28, a book-binder, was admitted into the Royal Infirmary, on the 29th of July last, for stricture of the ure-

thra at the bulb, complicated by a false passage, as stated in the recommendation of a medical man which he brought with him. The complaint was attributed to a gonorrhœa contracted ten years ago, and had been very troublesome for the last five years, impeding micturition so much, that the urine frequently could not be voided except by drops, and occasionally causing complete retention. It was through ineffectual attempts to afford relief during these attacks, by introducing instruments, that the false passage had been established.

"Having allowed the patient to remain quiet for a few days, I succeeded, on the 7th of August, in passing a bougie through the stricture, and thinking it likely that the treatment by dilatation would prove unsatisfactory, performed division on the 11th. The urine escaped partially by the wound for a few days, and the patient, who had been quite well for a fortnight, was dismissed on the 2nd September, without any trace of the disease or its remedy."

But we are not informed as to the present state of the patient. Every hospital surgeon has sent out cases of stricture treated by dilatation, with as favourable a note as Mr. Syme's of A. S., but that does not prove the *permanency* of the cure ; and although in Mr. Syme's hands the operation by external incision has, he says, but in one case turned out unsuccessful, and which case Mr. Syme has, as we would have expected from his high character, brought forward, still that one case is, in our opinion, quite sufficient to place the profession on its guard, the infliction of a fistula in perineo being a serious addition to a stricture of the urethra. In absence, therefore, of the proof of the permanency of the cure of a permeable stricture of the urethra by external incision, we are not at all surprised, as Mr. Syme expresses himself to be, that the profession has not adopted his treatment of stricture by the perineal incision, in preference to that by dilatation.

The great practical feature in Mr. Wade's book consists in his warmly advocating the treatment of stricture of the urethra by potassa fusa. After furnishing his readers with a history of the treatment of strictures of the urethra, Mr. Wade says :

"The severe effects occasionally produced by the nitrate of silver in the hands of Sir Everard Home, who used it very freely and boldly, naturally excited much prejudice against the method he employed ; consequently, so formidable a weapon as the armed bougie of Sir Everard is seldom wielded by modern surgeons. The nitrate of silver is occasionally used in small quantities to irritable strictures with very good effects."

And after informing us that Mr. Whately recommended

the employment of potassa fusa in strictures, in preference to nitrate of silver, Mr. Wade says that the practice of Mr. Whately has generally been regarded as ineffectual, from the extremely small quantity of potash which he employed; and tells us that it was the inefficient action of the nitrate of silver that first induced him to try the effects of potassa fusa in impervious stricture, more as a forlorn hope than with any confidence in its success; and he soon found it was necessary to use the potash in more efficient quantities, and more frequently, than recommended by Mr. Whately; and, encouraged by success in two or three cases, he has been induced to persevere in the use of that agent. The cases in which Mr. Wade recommends the use of the potassa fusa are the following:—Firstly, fibro-cartilaginous strictures, impervious to instruments, without the employment of injurious pressure; secondly, hard strictures of long standing, which, although admitting the passage of a small bougie, bleed freely on its introduction; thirdly, irritable strictures; fourthly, spasmodic strictures, not arising from acute inflammation of the urethra; fifthly, strictures which have a marked disposition to contraction. Mr. Wade applies the potassa fusa by inserting a small portion of it into a hole made in the point of a soft bougie, and says that the eighth of a grain is the smallest, and a grain the largest quantity of the potash that he ever uses. Mr. Wade refers to the Westminster General Dispensary, to which institution he has been attached for the greater portion of his professional life, for ample opportunities of witnessing the effects of different modes of treating strictures of the urethra; and the result of his experience, he says, is, that more can be done in bad cases of stricture by the judicious employment of potassa fusa, than by any other means. Any person taking up Home's work would be led to suppose that the treatment of stricture by nitrate of silver was the only safe and permanent one, and as innocent as Mr. Wade says his treatment by potassa fusa is; however, a careful perusal of Sir Everard Home's own cases at once proves that the treatment by nitrate of silver has been often followed by serious results. Notwithstanding, such was the influence of Home's name and writings, that for a time the treatment by nitrate of silver became the fashion; so much so, that the late eminent Professor Colles says in a clinical lecture, the notes of which we have by us, "I recollect when Dublin men, physicians and all, ran mad about strictures; it was just after Home's work came out, and every man thought he had a stricture, and nothing was spoken of at club-houses, &c., but strictures, and 'how is your stricture?' became a complete

watch-word. But some of the most valuable lives were lost by caustic before sufficient experience was obtained, and many died, others got violent rigors, which they were pleased to call intermittents, but which, in fact, were urinary fevers; and after a short time we found to our mortification it was a most dangerous practice. Home's plan did not get into discredit till many of his patients returned to Dublin, and then we found out that they were not *permanently* cured."

We are of opinion that the use of potassa fusa, in sufficient quantity to act on the urethra, is open to all the powerful objections which experience has raised against the treatment by nitrate of silver. If there is danger in applying the nitrate of silver to the sound, instead of the diseased portion of urethra, how much must the danger be increased in applying so diffusible an escharotic as potassa fusa? And although Mr. Wade says that in only one case was this use of the potash followed by an untoward result, viz., by perineal abscess, even if the patient should escape from urinary fever, false passage, profuse hemorrhage, retention of urine, still we hold that, if the deliquescent potash be used in quantity sufficient to destroy an existing stricture, it will produce one of a more formidable character, from the unavoidable loss of substance and the consequent contraction, one bearing, in fact, a considerable analogy to that form met with occasionally by every hospital surgeon at the orifice of the urethra, and which takes place at the former seat of a sloughing chancre, and is the result of the subsequent cicatrization. If, on the other hand, an insufficient quantity be used, as recommended by Whately, and to a certain extent followed up by Mr. Wade, no more advantage is gained by the application than would be obtained by the simple introduction of a bougie, the potash, under such circumstances, exerting no escharotic effect on the adventitious structure.

Surgical Anatomy of the Arteries, and Descriptive Anatomy of the Heart. By the late VALENTINE FLOOD, M. D. New Edition; by JOHN HATCH POWER, M. D., &c. &c., Surgeon to Jervis-street Hospital. Dublin, Fannin and Co. 1850. 12mo. pp. 189.

FEW publications on descriptive anatomy have obtained a higher reputation than Dr. Flood's on the Arteries, and as the first edition has been for some years completely exhausted, Dr. Power states in the Preface that he has been induced to prepare a new edition of the work: it thus, in our opinion,

merits additional commendation, presenting all the old excellencies, with many new and important emendations and additions. Amongst the latter we may refer to the anatomy of the heart, of the arteria innominata, of the subclavian arteries, and the operations performed on these trunks; of the axilla, and axillary artery; the operations on the brachial artery; to the circulation of the blood in the liver and kidneys; of the iliac arteries, and the operations upon these important vessels and their branches; and of the femoral artery, &c.

Physiological and practical observations have been judiciously appended to the details of the descriptive anatomy, which cannot fail to render the subject of greater interest to the student.

The work commences with the descriptive anatomy of the heart, which has been contributed altogether by Dr. Power; and a perusal of this chapter will give the reader a good idea of the clear yet simple style of the author,—a style peculiarly adapted to the anatomical student.

Together with a full description of the arterial system, the work will be found to contain a history of the various operations which have been performed on different portions of it, affording much practical and useful information.

Perhaps we could not present our readers with a better illustration of the practical nature of the book, than by quoting the following passage on the operation of tying the common carotid artery in its inferior stage:

“An incision is to be made through the integuments, along the internal margin of the sterno-mastoid muscle, for the extent of about three inches above the clavicle; in most cases a vein may be observed descending along the anterior margin of the sterno-mastoid muscle, communicating with the facial vein above, and with the thyroid plexus of veins, or subclavian, below: care must be taken not to injure this. A portion of the fascia should next be raised in the forceps, and divided in a horizontal direction; through this opening a director should be introduced, and the fascia slit up on it as far as may be necessary. The lips of the wound are next to be separated by retractors, the sterno-mastoid muscle being drawn outwards, and the sterno-hyoid and sterno-thyroid inwards. The sheath of the vessels will be thus exposed, and on the front of it may be seen the descendens noni nerve, which should be drawn inwards, and the sheath divided in the same cautious way as the fascia. A ligature is now to be passed round the artery, directing the needle from without inwards, in order to avoid the jugular vein, which sometimes suddenly swells out during expiration, and then contracts during inspiration. As the vein fills both at its upper and lower extremity, an assistant should in such case compress it both at the

upper and lower angle of the wound. In very many cases, the vein, so far from giving any trouble, is not even observed during the whole of the operation. In the case operated on by Dr. Browne, of the Navan County Infirmary, 'the internal jugular vein did not appear, nor was it a source of the slightest inconvenience during the operation.' Lastly, Mr. Read, of Dublin, whose experience is very considerable, is reported by Mr. Hargrave to have said that, 'in all the operations he performed, or assisted in, on this vessel, the vein was not found to interfere with the operation, nor was it even seen.'—*Operative Surgery*, p. 68. Care is to be taken to avoid including the pneumogastric nerve, which lies behind and between the vessels, and should be drawn outwards with the vein. The sympathetic and recurrent nerves are behind the sheath, and there is comparatively little danger of including them. In operating on the left side, the proximity of the thoracic duct is to be borne in mind."—pp. 35, 36.

The observation in the foregoing passage, with regard to the internal jugular vein not *always* proving a source of inconvenience to the surgeon, whilst tying the common carotid artery in its inferior stage, accords with our own experience. Lately we were obliged to take up the common carotid artery in the inferior part of its course, and so far were we from experiencing embarrassment from the swelling out of the jugular vein, that we scarcely saw it during the entire operation.

A short history of the treatment of aneurism by compression is appended to the surgical anatomy of the femoral artery; and as this plan of treating that formidable disease must be looked on as one of the greatest triumphs of modern surgery, and as, in this city at least, it has almost superseded the operation of tying the vessel, we think the subject has been happily introduced here.

A careful comparison of this edition of "Flood's Descriptive Anatomy of the Arteries" with the former one, will prove the great amount of additional information contained in the volume before us; and we feel assured that the publication of it will tend to support the far-famed reputation of the Anatomical School of Dublin, the task of bringing out a second edition having fortunately been undertaken by a surgeon and anatomist of acknowledged character. We therefore strongly recommend the work both to the student and the practical surgeon.

Essays on Infant Therapeutics: to which are added Observations on Ergot, and an Account of the Origin of the Use of Mercury in Inflammatory Complaints. By JOHN B. BECK, M. D., &c. New York, 1849. 8vo. pp. 116.

DR. BECK has been long known in these countries as the co-author of an elaborate and comprehensive Treatise on Medical Jurisprudence. He now appears before us in another character, and sustains it as well as he did the former. The present work, though small, contains much that is really useful and practical. It consists of seven essays, which were originally published in some of the American medical journals, and the favourable reception they met with from the profession induced the author to reprint them in an independent form. The first five essays treat respectively upon the effects of opium, of emetics, of mercury, of blisters, and of blood-letting, on the young subject; and the sixth and seventh are upon the subjects mentioned in the title of the book. Although we do not find in them anything positively new, still they are valuable in other respects. They are evidently the product of no inconsiderable research and reflection, and are no less characterized by systematic arrangement than by clearness of language. The plan pursued by Dr. Beck in the examination of each subject is simple and appropriate. He first describes the different peculiarities in the operation of the remedy on the child as compared with the adult; and having established and illustrated these *seriatim*, he then enumerates the practical conclusions which are thence deducible.

The effects of medicinal agents on the young are so very dissimilar from what they are on the grown-up subject, we are almost inclined to think with our author that a complete treatise on infantile therapeutics has been long needed in our profession. The systems of *Materia Medica*, valuable and elaborate as they are, and in which we should naturally look for the requisite information, are confessedly deficient on this subject. The consequence is, that the young practitioner who depends upon them finds himself continually embarrassed in the treatment of the diseases of children, and he is obliged, after all, to rely upon the incidental observations gathered from works on general practice, or upon the slow accumulations of his own experience. Even works professedly on the diseases of children do not adequately supply the want. They, indeed, specify doses suitable to the age, and now and then give cautions in relation to the use of certain medicines, but they do not enter

properly into the philosophy of the subject, as it ought to be viewed. It is treated by them more as a matter of enlightened empiricism, than as one founded on sound and rational physiological and pathological principles. These remarks are put forward without implying any depreciation of what has been done in this department by individual authors upon *materia medica* and upon the diseases of children; but we do not know of any treatise that enlarges upon this subject in that full comprehensive manner which it deserves.

Essay I. is upon the effects of opium on children. Our author forcibly points out the vast amount of mischief that annually occurs from the too general and unguarded use of this drug. Much of this, doubtless, arises from the employment of nostrums, and other forms, in which the quantity of opium present is liable to variation. Laudanum, camphorated tincture of opium, and Dover's powder, are, he thinks, the preparations of most certain strength, and most readily divisible into small doses, and therefore the best suited for young subjects. Even with these, however, an accident may happen. It is very well known that Dover's powder, when kept, as it usually is, in a bottle, requires to be thoroughly shaken occasionally, to prevent the sulphate of potash from accumulating at the bottom, which would consequently leave an undue proportion of the two other lighter ingredients at the top; and further, we have known almost fatal effects from the administration of laudanum which had been kept in an open bottle, where evaporation had taken place to such an extent that each drop was nearly double the ordinary strength of the medicine. After describing the influence which the state of the system has in modifying the effects of opium, he gives an example which we think well to adduce here:

"There is one condition of the young subject particularly in which this remedy is frequently resorted to, in which this is strikingly illustrated. I mean that state of exhaustion which arises from diarrhœa and other bowel complaints. In this state the head is very apt to become affected, and if opium be given with a view of checking the intestinal discharges, not unfrequently insensibility gradually creeps over the little sufferer, and in a short time death is the result; and this, too, even when the quantity used has been apparently adapted with great nicety to the wants of the case."—p. 16.

The tenor of his observations on emetics is to enforce greater caution in the use of antimony than is usually deemed necessary. Inflammatory excitement, he thinks, should always be present to justify its use in the young child; and where the

object is simply to empty the stomach it ought never to be thought of; whilst, if the infant is under twelve months old, it is wholly inadmissible. With regard to the manner in which tartar emetic proves dangerous to infants, Dr. Beck supposes it is probably more by its action as a sedative than as a local irritant.

It has been well remarked of mercury that "it constitutes one of the most powerful but dangerous medicines employed in infantile therapeutics." As the opinion of practitioners is very much divided as to its capability of producing ptyalism, we think it well to subjoin Dr. Beck's remarks on this point. After citing several authorities, he proceeds to say:

"That salivation does not take place so readily in the infant as in the adult, would seem then to be well established. That it never can or does take place, as might be inferred from some of the preceding quotations, is by no means, however, true; and the statement, if implicitly relied on, is calculated to be the cause of much mischief. That very young subjects do sometimes become salivated is unquestionable. One case, and only one, however, has occurred in my experience, in which a child of two years of age was salivated, and that by a very moderate quantity of calomel, viz., five grains, given in three portions, at intervals, within the space of about twelve hours. In about two days after, the gums became inflamed, the tongue swelled, several ulcers appeared in the mouth, and the flow of saliva was free. After continuing about three days in the same state, it gradually yielded and disappeared without any further inconvenience."—p. 41.

Dr. Beck would have rendered a very important service to the cause in which he writes had he been able to suggest some certain guide, analogous to salivation in the adult, whereby to judge of the effect of mercury on the system of the child. He himself, however, greatly laments the want of some such criterion, adding, and we think with much truth, that, in consequence of this, the use of the medicine is unnecessarily protracted in many cases to the great detriment of the little patient. It would seem that in America, as well as in this country, the practice of bleeding largely on ordinary occasions has, of late years, been falling into desuetude; and our author leads us to suppose that the reaction in the public mind against this Sangrado system (the injurious prevalence of which he attributes to the authority and writings of Dr. Rush) is so strong as to greatly circumscribe the utility of the remedy. "When an error is once exposed, we are apt to go immediately to its opposite, inferring that what is the reverse must necessarily be right; and so it has been in regard to blood-letting." He does

not think that the ordinary rule of guidance as to the quantity of blood to be drawn from a child, viz., to tie up the arm on the first indication of syncope, is by any means a sufficiently precise mode of determining the point. He suggests no better, however, and it is usually found to answer very well.

Some high authorities have recommended bleeding *ad deliquium*, in certain complaints of children; but we entirely concur with Dr. Beck, that this, as a general rule, is most objectionable; and that nothing but urgent necessity could justify it. The observations on ergot contain nothing that is new or interesting. Many of its properties and uses, well known to practitioners in this country, are wholly unnoticed. We would respectfully suggest to Dr. Beck, before writing another article on this subject, the propriety of looking over the pages of our Journal, where the writings of Dr. Beatty and Dr. Hardy will inform him upon many points he has omitted.

We now take leave of Dr. Beck, and shall be most happy to find him, at some future time, continuing his "Essays on Infant Therapeutics."

Iodognosie(a) ou Monographie Chimique, Pharmaceutique, et Médicale des Iodiques. PET DORVAULT.

Iodognosis; or a Chemical, Pharmaceutical, and Medical Monograph on Iodine and its Preparations. By DORVAULT.

IN some recent numbers of the *Gazette Médicale de Paris*, M. Dorvault, whose original work on pharmacy was noticed in the twenty-sixth volume of our former series, has published an essay on the properties of iodine under the above title. It contains an excellent *résumé* of the present state of knowledge as regards this most valuable medicine, and we purpose to present our readers with a short analytical review of it, commenting freely on his observations as we proceed. In a note to his first paper the author explains why he, a mere pharmacien, should undertake to write a medical paper.

"It may," he says, "be fairly asked, why I, who have not a medical degree, should attempt to write on a purely medical question. Almost at the same period, two learned societies, the Society of Medicine of Lyons, and the Society of Arts of Hainaut, proposed as the subject of a prize a question which combined both medicine and chemistry. It was necessary to accept both divisions of the subject

(a) From iodine, and γνώσις, knowledge.

or not to compete. I did so, and obtained the prize from both societies. This circumstance has made me a physician in spite of myself."

We thus find M. Dorvault placed somewhat in the position of Moliere's *Médecin malgré lui*, but we are happy to be able to add, not alone with much honour to himself, but with much advantage to the public and the medical profession. The author commences his essay with the following propositions:

1. *Chemically*, Iodine, from its activity and the character of its affinities, occupies a high position in philosophic chemistry.

2. *Pharmaceutically*, Iodine and its chemical compounds constitute the bases of above ten *magisterial* preparations.

3. *Therapeutically*,—There is as much difference between iodine and the iodide of potassium, as there is between mercury and corrosive sublimate, or between sulphur and the alkaline sulphurets. In medical therapeutics, iodide of potassium equals in importance sulphate of quina. In surgical therapeutics, iodine, when better known and more appreciated, will be of more service than the nitrate of silver is at present.

The chemical and pharmaceutical part of the essay having been previously published in the *Revue Scientifique*, the author, in the *Gazette Médicale*, proceeds at once to its medical history. A product but recently known in chemistry, iodine, has been long known in medicine; the celebrated Arnauld de Villeneuve, who taught alchemy and medicine with such celebrity in the thirteenth century, at Lyons, was acquainted with the powers of burned sponge in the treatment of goitre^(a); and it is even believed that its properties were known to his predecessors. As oil of salt it was known to the inhabitants of Colombia, who from time immemorial were in the habit of employing for this affection the residua of different salt springs, but especially that of Guaca; and in other parts of America, where this disease prevailed, the stems of a sea-weed, a substance named by the natives *palo coto*, were chewed as a remedy.

In popular medicine the algæ and other thallasiophyllæ were known in different countries, and their use perpetuated by tradition, while the employment of cod-liver oil is of extreme antiquity. Moreover, in saline springs which enjoyed repute in the cure of scrofula, modern research has discovered iodine. Courtais discovered iodine, yet to Coindet (of Geneva) are we indebted for the introduction of this substance into practice, nor was it admitted to a place in our *materia medica*

(a) *Breviarii*, lib. ii. cap. iv., De botio gulæ.

without much opposition. At the present period iodine is chiefly employed in the form of iodides, and deserves to be placed at the head of that class of medicines denominated by the ancients *resolvants*, and must be regarded as the most heroic agent in opposing plastic organization, and the most valuable remedy known for the treatment of bronchocele, scrofulous cachexia, and the worst ravages of constitutional syphilis.

As regards the physiological effects of the iodides, the author first classes all medicines in three principal groups, according to their dynamic powers upon living organization. Considering this action, he regards some as acting sympathetically upon our organs, whose morbid states they modify in virtue of simple transmission by continuity of tissue; such, for example, are emollients: others act on the nervous system, and their immediate action is more obscure and less open to analysis; narcotics belong to this class: while others act by chemically modifying our vitiated fluids; such are the salts of iron. Those belonging to the first class he denominates physiologico-sympathetic medicines; the second physiologico-psychological medicines; and the last, physiologico-chemical medicines. Amongst the latter the author establishes a subdivision called chemico-catalytical, of which iodide of potassium, the type of the iodides, is the most prominent. He proves this proposition by the following argument. If we submit the humoral fluids, (blood, lymph, sperm, milk), or their protein elements (albumen, fibrine, caseine), to the action of a solution of iodide of potassium, we shall find that coagulation is prevented in the former, and that the latter are rendered fluid. How is this result produced? Is it by changing their composition? Is it by taking or yielding some element? Not the latter, certainly, for if we separate the products we shall obtain the entire of the iodide of potassium, with all its chemical properties, unimpaired. It then must act by simple contact. This singular effect has been denominated by chemists catalytic force.

In certain pathological states of the living organization the phenomena are the same. The fluidifying action will be produced, and rendered sensible by a modification of the lymphatic and sanguineous circulation, and the integrity of the modifying agent be recognised; if we take, for example, a humoral fluid, blood from a vein, or if we experiment upon urine. This simple fact proves, that the iodide of potassium should be placed amongst physiologico-chemical medicines, with catalytic action.

Iodine may be detected in the tears, the milk, and in the excretions, as in the sweat and urine. Moreover, it stimulates

generally secretion and exhalation, increases the functions of the mucous follicles of the mouth, of the salivary glands, of the alimentary canal, liver, kidneys, skin, pancreas, &c. But the different animal fluids, when saturated with a salt of iodine, readily get rid of it. To this fact Dr. Kramer bears testimony. Having taken the iodide of potassium for fifty days, six days sufficed for the elimination of the salt. Marchal (de Calvi) assures us that he has found iodine in the urine, at the end of five-and-twenty minutes, or, at most, of an hour, after its administration, the dose given having been about two-thirds of a grain of iodide of potassium. Pure iodine, when introduced into the system, has similar effects; and although acting with strong coagulating power in the first instance, meeting rapidly, in the fluids of the body, with sufficient alkali (potash, soda, or ammonia) to saturate itself, it becomes changed into both an iodide and iodate, unless it be entirely transformed into hydriodic acid in the stomach, in which case there is only formation of an iodide. The vapour of iodine, according to Panizza, is as prompt in action as when the substance is swallowed. Of this he gives the following experiment as proof. A goat was made to respire air charged with the vapour of iodine, by having its head confined in a large box. At the end of half an hour the animal was bled, and to the blood potash was added. It was then carbonized, and the water and vapour evaporated to dryness, when the residuum, on the addition of sulphuric acid, gave out the vapour of iodine.

M. Dorvault next proceeds to speak of the immediate action of the iodides. He thinks that former writers on their curative effects have not properly explained the subject, taking their accidental or consecutive effects for the actual or efficient. Amongst the physiologists, one class believed it to be an excitant, whilst another regarded it as a hyposthenic or contra-stimulant. But it is neither truly stimulant nor sedative; as the stimulation, in place of preceding the amendment of the pathological state, follows it, and is only the consequence of the amelioration of the constitutional powers; and its sedative action only takes place because it combats with success, not the exacerbation of the circulating system, but the disease which caused it. A third class, and to which belong the greatest number of physiological observers, look upon it as an alterative, or that it has the power of changing the state of the solids and fluids, without producing immediate appreciable effects. Our author contends that its effects are appreciable even from the time of taking the first dose, and asks is there the least analogy between the curative posology of alteratives—mercury, for ex-

ample—and that of the iodides, and particularly the iodide of potassium? A fourth opinion was advanced by Dr. Cantù, who attributes its therapeutic properties to its chemical action, namely, possessing the power of depriving organic substances, even whilst living, of their hydrogen; and the proof given by him is, that having entered the system as a simple body or in that of an iodide, it is found in the fluids or solids in the state of hydriodate. This opinion was founded on that of the chemists of his time, who made a distinction between the iodides and hydriodates. Finally, Vogt, in placing the iodides in his third class and first order, or medicines operating specially upon the secretory and exhalant systems, seemed to view it as a sudorific; but here, again, we have the consecutive for the immediate effects.

The author, having combated in detail the above opinions, propounds his own view, namely, that its mode of action resides in its fluidifying power upon the animal liquids, depriving them of the tendency exhibited, under certain morbid conditions, of allowing their constituent and protein elements to separate and form new products, such as coagula, false membranes, and divers pathological changes.

To remove objections to this exclusive view, M. Dorvault adds that the therapeutic power of the iodides does not wholly reside in this fluidifying property, but that they have a special power inherent in their nature. This seems to us but a begging of the question; and we do not think that on this part of his subject the author has thrown any additional light. He next propounds the questions, Does iodine act only in a state of combination, and particularly in the form of an iodide of potassium? If so, to which, then, of the elements of this salt, is it indebted for its special power?

It is long known that the salts of the same base, whatever may be the acid or the electro-negative element, have in general the same physiological effects, and almost the same intensity. The magnesian salts are always purgative, antimonial salts always emetic, &c. &c. Now, it is rational to infer, that to the base and not to the electro-negative body appertains the dynamic power of the product, unless the electro-negative body be endowed with decided medical powers, as cyanogen in the cyanides, or valerianic acid in the valerianates, in which case it may balance or even overcome the electro-positive body. The question now is, does iodide of potassium, the type of the iodides, act by its base, potassium, or by its radical, iodine? If we were to resolve the question by analogy, we should reply, the former. Chlorine, which is well known to have such a remarkable chemical analogy with iodine,

when combined with potassium or with other metals, loses all its physiological qualities, and the compound only presents the qualities of the metal to which the gas is united. But in the iodides of the metals, and especially in the alkaline and earthy iodides, the peculiar therapeutic powers of the iodine predominate.

In concluding this part of his subject, M. Dorvault sums up the question with the following statement, namely, that the iodide of potassium has the power of dissolving or fluidifying the fibrine of the blood, and of maintaining it liquid, without destroying the globules; whilst the mineral alkalis, the ammoniacal salts, and other substances, dissolve the globules also. M. Poiseuille believes that it is owing to this property that iodine has the power of facilitating the flow of blood in the vessels, whilst other substances that have the power of dissolving the fibrine either do not at all influence the motion of the blood, or retard the circulation.

The therapeutical application of the iodides in diseased states of the system, is next considered; in it is given a *résumé* of the experience of the most celebrated writers on this subject. The first disease spoken of is goitre, as it was the first in which the remedy was used. The author tells us that it does not act uniformly on every species of goitre, and that it possesses more power in some localities than in others; viz., that goitre is more under its control in Switzerland than in Paris. That Coindet in this disease found its external application to be successful, and when administered internally at the same time gave it but in very small quantity. The following are the statistics M. Dorvault has collected. Coindet cured two-thirds of the cases treated; Irmingier cured 50 in 70; Boup, 45 in 46; and Manson, 87 in 116.

Next, as regards scrofula, the author first describes the various means of cure and by whom they were introduced into practice; he then tells us that he can give no higher proof of the efficacy of iodine in this disease than by presenting a summary of the observations of Lugol, contained in his third memoir on this subject. The observations are classed under the following heads: 1st, scrofulous tubercle; 2nd, scrofulous ophthalmia and coryza; 3rd, cutaneous scrofula, both in the ulcerative and in the corroding form; 4th, scrofula of the areolar tissue; 5th, scrofula of the bones. Of the first there were four cases, all cured; of the second, two cases, all cured; of the third, four cases, all cured; of the fourth, four cases, three cured and one left hospital before the cure was completed; of the fifth, eleven cases, nine cured and two relieved. We

are not, however, to look upon iodine as an infallible remedy in this disease. It acts with more certainty in some forms and stages than in others. Thus it is not so efficacious in the hereditary as in the acquired form of scrofula; in adenitis, arthritis, and scrofulous osteitis, as in the simple swelling of the glands.

M. Dorvault next passes in review the various articles of the *materia medica*, which have been used in the treatment of syphilis; informing us that Oppenheim, of Hamburgh, has enumerated no less than 141 simple and more compound substances which had been recommended at different times, as substitutes for mercury, in the treatment of this disease. He regards the iodide of potassium as really deserving the title of an anti-syphilitic remedy, though not always replacing the use of mercury, often coming to our assistance when the action of that metal on the disease becomes diminished, or has altogether ceased. The following is a concise history of the employment of the iodides in the treatment of syphilis. Coindet in his third memoir on iodine, propounds the opinion that iodine will be given with mercury for the cure of syphilis in scrofulous subjects; and Biett, in 1824, bears testimony to the justness of that supposition. But to Brera, of Padua, in 1822, belongs the credit of having used iodine alone as an anti-syphilitic. He and his followers, few in number, employed it only in blennorrhagia, chancre, and bubo,—symptoms of the first stages of the disease in which this medicine is possessed of least power. It was not, then, till 1828, that the iodides were applied to the treatment of the tertiary symptoms of syphilis, where their triumph has been even more complete than in scrofula. At this period Lugol published three cases, but did not attribute to iodine the credit that it deserved, believing the cure by it to have been a fortuitous circumstance. It is, however, likely that it was from the publication of these cases that others were led to a trial of its efficacy. What has been related of Lugol applies equally to Martini of Lubeck, who about the same period experimented on its powers in combating chronic syphilitic swelling of the testicles. Lucas Champonnière, in his *Medical and Surgical Journal*, states in 1834, that the iodides were employed for many years previously by Cullerier in chronic syphilitic affections; and in his work entitled "*Researches on Syphilitic Therapeutics*," published in 1836, he again insists upon the beneficial results of the employment of this medicine: "There was nothing authentic or generally known," writes Dorvault, "of the employment of the iodides in syphilis until the year 1836, when Wallace of Jervis-street Hos-

pital, Dublin, published his clinical observations in the *Lancet*. With these lectures the French faculty were well acquainted in 1837, and in that year Ricord experimented on the iodide of iron in constitutional syphilis. But the Irish surgeon so clearly demonstrated in his lectures the happy results acquired from the neutral iodide of potassium, that the astute syphiliographer of l'Hôpital du Midi hastened to use this new agent. The impulse given to the surgeons of other countries was not long in teaching its use and confirming the renown of its anti-syphilitic qualities."

The author considers, first, is iodide of potassium equally applicable to all stages of the disease? And this he examines as it relates to the three stages of syphilis. The remedy was first tried in the primary disease, yet our knowledge has but little advanced as regards it; and it is only within the last two or three years that trials have been accurately made as to its efficiency; according to Ricord it does not seem to have any influence on the primary symptoms; and such, without entering into detail, is the opinion of most modern surgeons. In this, as a general rule, we concur ourselves: but there are exceptions; as where primary symptoms occur in broken-down constitutions, when we believe that much benefit may be derived from its employment, more particularly in the phagedenic or sloughing form of the disease. But let us not be misunderstood; for as both these forms may arise from either excess of inflammatory action or want of power in the system, it is to the latter we refer, in which, in combination with opium, it is sure to prove beneficial.

As to the second question,—Is it efficacious in secondary symptoms?—our author tells us that surgeons seem to be divided in opinion. Some believe that this is the form where mercury is most advantageously employed, yet under certain circumstances iodide of potassium may be used with marked advantage: while others assert, that from a combination of both the happiest results are sure to follow. For our own part, we believe that the squamous form is most quickly cured by mercury, but when the squamous form runs into the ulcerative, then the iodide of potassium is of most benefit; and if it again become freely scaly, mercury may be again resorted to with the most decided advantage. In the other forms of secondary symptoms, we believe the iodide of potassium may be with advantage substituted for mercury. As to the cases in which the mixed method of administering mercury and the iodide of potassium at the same time is found of benefit, we doubt not but the bichloride of mercury would be productive of a like advantage.

In tertiary symptoms, iodide of potassium stands unrivalled, and the more chronic the disease, the greater seems to be its power. In the most intense osteocopic pains it proves an immediate opiate, resolves the most voluminous exostoses, even if of long duration, stops the progress of caries and periostitis, and finally cures them. Quoting Ricord and Payan, he tells us that in this form of constitutional syphilis they look upon it as a specific, and that Chomel is enthusiastic in its praise. M. Dorvault gives numerous cases, which we need not delay upon, to prove the efficacy of the iodide of potassium in tertiary symptoms. He next proceeds to tell us that Ricord has found the most wonderful effects from the iodide of potassium in *syphilitic cancer* of the tongue. We must, however, differ from so high an authority, in the belief that there is such a disease as syphilitic cancer. What is here described is, we believe, nothing more than a tertiary form of ulceration attacking the tongue, and calling it by the name of cancer leads but to error in forming a true pathology of that disease.

The comparative value of the treatment by mercury and the iodides, in the various stages of syphilis, as laid down by the author, may be summed up as follows. Mercury is the proper remedy for the primary and secondary stage, and the iodide of potassium for the third. In doubtful cases, where mercury fails, the iodide of potassium will succeed, and *vice versâ*; that, this reciprocity being fully appreciated by practitioners, the happiest results may be expected; and in those cases where either would suffice, the preference should be given to the iodide of potassium, as being the most expeditious and less likely to produce injurious consequences. M. Dorvault concludes his essay by passing briefly in review the various other diseases in which the preparations of iodine have been employed, but to these we shall not at present advert.

The Use of the Blow-pipe in the qualitative and quantitative Examination of Minerals, Ores, Furnace Products, and other Metallic Combinations. By PROFESSOR PLATTNER, Assay Master at the Royal Freyberg Smelting Works. Edited, with Emendations, by Dr. SHERIDAN MUSPRATT, Professor to the Liverpool College of Chemistry, &c. Second Edition. London, Taylor, Walton, and Maberly. 1849. 8vo. pp. 401.

It is to be feared that the new aspects which chemistry has assumed within the last few years may have the effect of diminishing the number of the cultivators of this science amongst

the members of the medical profession. With the progress of discovery there has been a formidable increase in the amount of facts to be learned, and much embarrassment created by the never-ending changes of nomenclature. To us who remember the delight with which, in imitation of Wollaston, we enjoyed the practice of tube-chemistry, when, with a spirit-lamp and a small box of tests and apparatus, we experimented on the qualities and chemical properties of articles of the *materia medica*, or on the products of disease, it appears that the practical cultivation of the science on the small scale is likely to be no longer followed. That chemistry should thus be once more consigned exclusively to those who can devote themselves to it alone, and that it should be only known in theory, and not practically, by medical men, will be detrimental not only to the progress of the most valuable applications of the science, but must tend to diminish the rank and confidence which the members of the medical profession ought to hold in the eyes of the public.

It was, then, with no light expectations that we commenced the perusal of the work before us, as promising practical instructions for the chemical student. It is singular how much the uses of the blow-pipe have been either overlooked or imperfectly appreciated. Although, at first sight, it presents the powers of a blast-furnace, when applied to small quantities, yet even this use of it has only of late years led to anything like a just estimate of the extent and variety of its capabilities. We learn from Dr. Muspratt's introduction, that Bergmann was the first who published on the subject. His treatise, *De Tubo Ferruminatorio*, appeared at Vienna in 1779. Gahn, who acted as Bergmann's assistant, continued to employ the instrument in every kind of chemical and mineralogical inquiry; and attained such skill in its applications, that by it alone he was often enabled to detect the presence of substances which had escaped the most careful analysis conducted in the moist way. Thus, when Ekeberg asked his opinion respecting the oxide of columbium, then recently discovered, and of which he sent him a small specimen, Gahn immediately found that it contained tin, although the proportion of that metal in it does not exceed one per cent. Long before the question was started whether the ashes of vegetables contain copper, Berzelius states that he had often seen him extract, with the blow-pipe, from a quarter of a sheet of burnt paper, distinct particles of metallic copper. Gahn always travelled with his blow-pipe, and his great experience led him to make several improvements in its application. There was another distin-

guished operator on the blow-pipe, the great naturalist Saussure, so justly celebrated for his geognostic researches on the Alps of Switzerland. He, as well as Cronstedt, employed the blow-pipe chiefly in distinguishing minerals. Although he made additions and improvements on this subject, yet he did not form an adequate estimate of its powers, and, consequently, never obtained any results to be compared with those of Gahn.

This work of Plattner, for the first time introduced to the British public by Dr. Muspratt, has a high reputation on the Continent. It has been commended, in the strongest terms, by four of the most eminent chemists of the day, Liebig, Berzelius, Rose, and Kane, and has been translated into French by Dr. Sobrero. The plates, which in the original are at the end of the volume, are, in Dr. Muspratt's translation, printed in the margin, so as to illustrate the text. There are several valuable notes by Dr. Muspratt, and the whole work is in the highest degree creditable to all concerned in its preparation. We can add no further commendation, and can only express our hope that the work may soon be in the possession of many of our professional brethren.

The following extract will prove the practical utility of the work, and is an excellent illustration of the style; it is an account of the behaviour of urinary calculi before the blow-pipe:

“URIC ACID CALCULI.—*Per se*, on charcoal or on platinum foil, they become carbonized, fume, and emit an organic smell; in the exterior flame they gradually diminish in size, and, towards the end of the operation, they burn with increased light. When the blast is discontinued they still continue to glow, and at last leave a very slight trace of white ash, which is strongly alkaline.

“Since other combustible substances may be easily mistaken for uric acid, the operation must be performed in the moist way as follows:—A small quantity of the calculus, say one-tenth of a grain, must be placed on a small strip of glass or platina-foil, moistened with a few drops of nitric acid, and heated over the flame of the spirit-lamp. The uric acid dissolves with effervescence, and the mass must then be carefully dried, so as not to become burned, and then heated for an instant, when it acquires a fine red colour. If the quantity is trifling, the latter often becomes black without acquiring a tinge of red. The experiment must then be repeated, and when the solution in nitric acid is dry it must be laid aside, and allowed to cool perfectly; the glass must then be inverted over a little caustic ammonia, which is then to be heated; as soon as the vapour of the ammonia reaches the dried substance it becomes beautifully red (a method first invented by Professor Jacobson, of Copenhagen, who thus proved the existence of uric acid in animals of the lowest

classes). The same thing may be observed, though the colour is less striking, if the dried substance be softened with diluted ammonia.

"It often happens that calculi contain a mixture of uric acid with earthy phosphates. They then carbonize and consume, leaving a considerable residuum, which is not alkaline or soluble in water. Treated with nitric acid, and afterwards with ammonia, they give the fine red colour characteristic of uric acid. The remaining acid is either phosphate of lime or phosphate of magnesia, or a mixture of the two.

"URATE OF SODA CALCULI, rarely occurring in urinary calculi, are often found in the hard excrescences which form around the joints of gouty patients.

"Alone, on charcoal, they blacken, emit a burned odour, and leave a grey, strongly alkaline substance, which can be fused to a glass with silica. If the calculus contains earthy salts, as is usually the case, the glass becomes white or greyish and opaque.

"URATE OF AMMONIA CALCULI behave before the blow-pipe like uric acid calculi. Treated with a drop of caustic potassa, they give, when slightly warmed, a strong smell of ammonia. Care must be taken not to confound this with the slight ammoniacal odour which almost all organic substances develop when treated with an alkali. These calculi often contain a quantity of urate of soda.

"PHOSPHATE OF LIME CALCULI.—Alone, on charcoal, they blacken, emit the odour of burning organic matter, and finally burn white. They do not fuse. Their behaviour resembles in general that of phosphate of lime.

"They are proved not to consist of silica by swelling up with soda, and not fusing to a glass, as well as by giving a regulus of phosphide of iron, when dissolved in boracic acid and fused with iron.

"AMMONIACAL PHOSPHATE OF MAGNESIA CALCULI.—Heated alone on platinum foil they smell strongly of salts of ammonia, blacken, intumescence, and burn greyish white if the heat be increased. They fuse readily to a greyish white enamel-like bead.

"They give a transparent glass with borax and microcosmic salt, which, with a large quantity of the assay, becomes opaline on cooling.

"With soda they fuse to a white swollen slag, which becomes infusible on the addition of more soda.

"With boracic acid and iron they give readily a regulus of phosphide of iron.

"With nitrate of cobalt they give a dark red glass.

"CALCULI COMPOSED OF THE PHOSPHATES OF LIME AND MAGNESIA (*Fusible Calculi*).—Recognised by the slight ammoniacal odour they emit, arising principally from the destruction of organic matter in the calculus. They fuse far more readily than any others to an enamel-white bead, which does not become red with the oxide of cobalt, but brownish black.

"CALCULI COMPOSED OF OXALATE OF LIME (*Mulberry*).—Alone, they smell of urine when first heated. The more strongly crystalline varieties become duller and lighter coloured. After being slightly heated the residuum effervesces with a few drops of nitric acid; and after being strongly heated on charcoal, caustic lime remains: this has an alkaline reaction on reddened litmus paper, and generally crumbles to powder when moistened. This is not the case, however, if the calculus contains at the same time phosphate of lime.

"CALCULI CONTAINING SILICA leave, after ignition, a greyish, infusible, and sometimes slaggy ash, which, when mixed with soda, slowly dissolves to a more or less transparent glass.

"CYSTIC OXIDE CALCULI behave before the blow-pipe very much like those of uric acid; they do not fuse, but take fire readily, and burn with a bluish-green flame, emitting a strongly acid smell, peculiar and somewhat resembling that of cyanogen. They leave an ash which is not alkaline, and which fuses in a strong heat to a greyish-white mass.

"They are distinguished from uric acid calculi by the smell which they emit when burning, and by not giving a red colour with nitric acid."

The Anatomy of the external Forms of Man; intended for the Use of Artists, Painters, and Sculptors. By DR. J. FAU. Edited, with Additions, by ROBERT KNOX, M.D. London, Baillière. 1849. 8vo. pp. 313. With an Atlas of Twenty-eight Plates. 4to.

THE most famous school for the instruction of artists and sculptors in Greece was kept by Pamphilus; in the course of study was included anatomy. From this school, among other great artists, came Apelles. We wanted not this fact, however, to prove to us the care with which the unapproachable artists of antiquity studied the structure of the human form; their works are evidence enough. The statues of the Apollo, the Farnese Hercules, the Venus, are not mere copies of individuals, they are personifications of something above the human figure. Grace, strength, and beauty, are realized in these noble productions of genius, by men so imbued with profound knowledge of the human form that they could group together in one faultless proportion many beauties never met combined in any single human being. That their painters were equal to their sculptors, the paintings on the walls of the houses of Pompeii prove. The painting of Jupiter in the house of Ceres, Meleager returned from hunting, the Bacchus, but, above all, the twelve figures of the Hours, are most perfect delineations

of the human figure, full of grace and beauty. We have quite sufficient evidence that the greatest of the Italian artists devoted time and labour to the acquisition of a knowledge of anatomy. In some of the fac-similes of the drawings of Leonardo da Vinci, whose "Last Supper" may be regarded as the most admirable sacred picture ever painted, are numerous examples of anatomical designs of legs, arms, and trunks, exemplifying the play of the muscles. The anatomical arrangements of the muscle in the legs of fowls and horses are even designed to illustrate some of his mechanical theories. In the drawings of Raffaele, also, are several designs, or rather first thoughts, of sacred pictures, in which the skeleton is placed in the centre of the figure. This is especially remarkable in the figure of the Virgin Mary, who is fainting at the sight of the dead body of her blessed Son. There are several sketches of this figure in different positions, but the skeleton seems in most of them to have been sketched as the foundation of the outline of the form. Michael Angelo's profound knowledge of anatomy, if it sometimes led him to a too prominent delineation of the muscles, also enabled him to portray, with unequalled power, the body in action: witness the extraordinary though scarcely pleasing picture of "Soldiers surprised while Bathing." In the wonderful picture of the "Last Judgment," the varied forms, and actions, and even distortions, of the multitude of figures,—of the blessed, of the damned, of angels and of devils,—could only have been conceived and executed by a master thoroughly conversant with anatomy, not merely of the position but of the action of the muscles, bones, and joints.

The Caracci, in their celebrated school, had, according to Pilkington, "the assistance of a very noted anatomist, Antony de la Tour, who taught the disciples whatever might be necessary to be known relative to the knitting of the bones, and the insertion of the muscles."

Titian is said to have made the drawings from the dissections of Vesalius, which we observe in the anatomical folio of the latter.

Holbein and Albert Durer, who, though inferior to the Italian masters, have yet left imperishable names in a lower style of art, must both have been considerable proficients in anatomy. The skeletons in Holbein's "Dance of Death" are admirably delineated, and Albert Durer's work on the proportions of the human body leaves no doubt of his anatomical knowledge. In the admirable picture by Rembrandt, of "Tulpius lecturing on Anatomy," we may see how accurately that great artist has drawn the foreshortened figure on the table, and the

dissected fore-arm. In criticising this picture, Sir Joshua Reynolds commits a curious mistake. He says, that many have found fault with Rembrandt for the stiff position of the left hand of Tulpius, and the extreme flexion of the fingers. The fact being that Tulpius, with his right hand, is holding up with a forceps the flexor digitorum profundus, the action of which muscle, in flexing the ends of the fingers, he is demonstrating by the position of his left hand. About the time of Sir Joshua, however, very little attention was paid to anatomy, and the consequence was a general feebleness in drawing, from which reproach his own great genius barely emancipated him. Proportionate with the present extraordinary advance in painting and sculpture has been the attention paid to the acquisition of anatomical knowledge. The French have been particularly distinguished by their works on this subject, and none could be better adapted for the purpose of imparting the requisite information to the artist than the work under review. The better to accomplish this plan it is divided into two parts; the first comprises: 1st, general considerations on man, and on the modifications he undergoes under the influence of moral and physical causes; the characters of the different temperaments, and of the races of men; 2nd, a brief sketch of the human organization; 3rd, the description of the skeleton, considered in its different parts, and as a whole; 4th, that of the articulations or joints, and the functions they perform; 5th, animal mechanics; 6th, the description of the contours of the external surface of the integument; the indication of the principal causes of forms; the mode of measuring all the parts of the body, and of determining the proportions.

In the second part are contained: 1st, considerations on the osseous forms; 2nd, the description of the forms and of the changes caused in them by muscular movements, by age, sex, &c.; 3rd, in the concluding chapter, some examples of the anatomy of forms, applied to the study of the antique statues. He has very judiciously avoided a mere dry detail of the composition of the human frame; the generality of art students would otherwise be disgusted in the very beginning. At the same time he has not fallen into mere superficiality, a greater error even than the first, for nothing is so barren as a mere sketch of knowledge; its impression on the memory is so faint, that it rapidly fades away. In his general observations on the structure of man, we find M. Fau falling into a vulgar error, in describing the physical condition of the savage.

"Look," he says, "at this man, whose frame has been freely developed, untrammelled by civilization; look at his erect form gene-

rally elevated, his large chest and slender limbs, robust without being heavy. Tight shoes have not contracted or deformed his feet; Rarely surcharged with fat, he yet seldom shows that diseased meagreness so common in the inhabitants of our cities. It is thus that the artist ought to represent man who has not yet contracted our vices and our infirmities."

With this he contrasts the inhabitant of our large towns, his frame meagre and deformed by tight clothes, without strength or suppleness. Now it must not be forgotten that savage races differ most materially. The North American Indian is the *beau ideal* of a savage. Tall, erect, muscular, courageous, with noble features,—a thoughtless observer might conjecture that he was so, because

" Wild in woods the native savage ran."

But if we turn to the Australian savage, we find him slight, and low in stature, the extremities of the women so small as to approach deformity. Savages of the same race even differ; among the Negro race are some of the finest specimens of the human form, according to Walsh; while, on the other hand, the ordinary deformities of some tribes of that variety of man are sufficiently well known. We may be allowed to point, with some degree of national pride, to the specimens of the civilized man presented by our constabulary and city police. We venture to doubt whether any number of picked savages would come up to them. The same might be said, in M. Fau's own country, of Napoleon's guard. We by no means deny, however, that the physical organization of civilized man is deteriorated by the mode of life: in towns, and particularly manufacturing cities, miserable examples of dwindled men and women do unfortunately abound. It is in cities, however, that as the body contracts the mind expands, and he well observes, that it is there we meet with "those noble heads where thought presides and dominates." The habits and pursuits of the individual do very materially influence the organization; in some trades the arms and trunk are strikingly developed, while in others, as in dancers, the legs are most so. Artists, of course, should bear these facts in mind. Imprisonment and disease will also both deteriorate the colour and form. Temperament causes a well-marked difference in the appearance of different individuals. The author describes five temperaments: the athletic, sanguine, lymphatic, nervous, and bilious. After these he lays before the artist those differences depending on the races of mankind. In this he follows M. Gerdy's classification, who makes out four varieties, the white, yellow, black, and red. In these the

facial angle varies considerably, as does the size of the cranium; the area, for example, of the European cranium, being four times that of the face, whilst in the negro the area of the face has been increased by a fifth.

After these preliminary observations M. Fau proceeds to the anatomy. First, a general summary of the organization, beginning with the skin, the subcutaneous cellular tissue, and the layers of muscles; and, finally, the position of the deeper viscera, which constitute the contents of the great splanchnic cavities. At the first view it might be thought that the latter information would be useless to the mere art student. We, however, quite agree with the author in the propriety of giving a general view of the whole system of organs; it does not prevent the student from paying more attention to those parts, viz., the bones and muscles, most useful to him, but it relieves the mind from the unsatisfied feeling which is experienced as long as any part is left unknown. In the subsequent more particular description of the bones and muscles of the extremities and trunk, and of the articulations, the same good judgment is displayed, of avoiding unnecessarily minute details which would only disgust the artist. The descriptive anatomy is naturally followed by applying it to animal mechanics, as the different motions of the body to preserve its equilibrium, when the line of gravity is altered, not only in ordinary movement, but in pregnant women, or very fat men, who are obliged to walk in a particular manner, very erect, or leaning back, to counterpoise the anterior weight. The different levers are described with reference to the bones, muscles, and articulations. The descriptive anatomy also leads to a knowledge of the different contours of the body, and the parts constituting the various prominences and depressions, whether observed in the front view, or seen in profile: these are considered in detail, and are of the utmost value to the artist. The skin is found to present a variety of tints in different parts of the body:

“White and smooth on the forehead, nose, chin, cheek, &c.; coloured on the cheeks, lips, palms; and generally browned on the abdomen and back part of the thighs, as also on the neck, especially when exposed to atmospheric influences; browner on the outer than on the inner side of the limbs, and more especially on the back of the hands; smooth in certain regions, as on the neck, breast, back, and abdomen, anterior surface of the arm, and inner surface of the lower extremities; somewhat rough, and studded with papillary projections, on the back of the arms, and external side of the thighs and hips. The rugous or rough surfaces, scarcely reflecting

the light, have a flat and more solid tone than the smooth parts, to which a luminous reflection gives a greater brilliancy, and a sort of remarkable transparency, especially in woman."

Could any description be more useful than the above to the painter?

While describing the different prominences formed by muscular development, he cautions the artist against too prominent a display of his anatomical knowledge of this part of the frame. This was more needed some years ago in France than at present. A mere delineation of man correctly anatomical would present an unpleasing and insipid spectacle. Two other things should ever be borne in mind, movement and expression. It would be tiresome to our readers to go through in a cursory way the very important chapters on the motions of the head, and the expression. One axiom on this latter point deserves to be remembered, viz., that "in general, in powerful emotions, the traits of expression concentrate towards the middle of the face; whilst they spread out, removing from this centre, in expressing pleasure and agreeable emotions." We are rather amused with the gusto with which M. Fau dwells on the beauty of the form in woman; it reminds us of Mercutio conjuring Romeo by "Rosaline's high forehead and her scarlet lip, by her fine foot, straight leg, and quivering thigh."

"If the torso of man," he says, "be remarkable for the richness and the energy of its forms, in woman it is equally so for the unsurpassable beauty of its voluptuous contours and graceful inflections. Sometimes a white and diaphanous skin permits the azure net-work of veins to be seen through the surface; sometimes it is tinged with the warmest colouring, betraying the presence of ardent and impetuous passions.

"The breadth of the pelvis is remarkable in women, nevertheless its transverse diameter is generally inferior to that of the shoulders which it sometimes equals; the haunches project outwards, but are harmoniously rounded. The contours of the back are of the most admirable purity; the region of the kidneys is elongated, the scapulæ scarcely visible; the loins gradually curved forwards, the haunches prominent and rounded; in short, the posterior surface of the torso in woman, is unquestionably the *chef d'œuvre* of nature." And again: "These two systems, the muscular and osseous, are more-over enveloped in a layer of celluloso-adipose tissue, softening the depressions, and contributing powerfully to give to the body of a fine woman those seductive forms which secure to the weaker sex absolute dominion over the stronger."

We may conclude our notice of this part of the work with

the observation, that the division of the body into so many equal parts which he prefers is that of Jean Cousin, who published a work so long ago as 1685. He distributes the body into eight divisions, viz.:

From the summit of the head to the lower part of the chin,	1
„ inferior part of the chin to the nipple, ...	1
„ nipple to the navel, ...	1
„ navel to the genitals, ...	1
„ genitals to the middle part of the thigh, ...	1
„ middle of the thigh to the knee, ...	1
„ knee to below the calf, ...	1
„ below the calf to the heel, ...	1

There are numerous subdivisions, all most useful to the artist.

The accompanying portfolio of plates is most beautiful. They are lithographs in the highest style of art, by Lemer cier of Paris, after drawings from nature by Leveille, and we are sorry to say that at the price we could produce nothing equal to them in the British Isles. The delicacy and fidelity of the flesh tints is admirable, not less so the colouring of the dissected muscles. Of these coloured plates there are twenty-four, including a most interesting *dissection* of the Laocoon. There are four other uncoloured lithographs of ancient busts and statues, executed in London, of less merit. Taking the work as a whole, we are bound to say it is one of the most valuable and beautiful contributions to art we have ever seen, and one which must command the patronage of anatomists and artists.

Medico-Chirurgical Transactions, published by the Royal Medico-Chirurgical Society of London. Vol. 32. London, Longmans. 1841. 8vo. pp. 192.

THAT ancient and valuable Society, the Medico-Chirurgical of London, with which some of the most learned names that have adorned medicine and surgery are intimately associated, still continues to publish its Transactions with great regularity. The volume is now published at shorter intervals than formerly, which accounts for its diminished bulk; and though we do not find in its pages, so frequently, as in the earlier volumes, essays from such men as Astley Cooper, Bright, Crampton, Chambers, it yet presents us with many practical contributions of great intrinsic merit, a short account of which, from time to time, cannot fail to prove both interesting and

instructive to our readers; and at present, therefore, we purpose to notice the papers contained in the last volume.

The first essay is by Dr. Basham, on *The Employment of Nitrate of Potash in Acute Rheumatism*. In bringing forward this subject, the author states, that he does so rather in the hope of determining the therapeutic value of this salt, and examining its agency, than with any wish to claim originality. The first principle laid down is, that in inflammatory disorders the blood contains an excess of fibrine with an absolute deficiency of the saline ingredients; the mean results he obtained from several analyses of the blood in acute rheumatism being, of fibrine, 7·163, and of saline matters 8·478 parts in 1000. Dr. Basham's argument then is, that the therapeutic action of nitrate of potash, in acute rheumatism, must be explained by its contributing to restore the balance of the saline ingredients, and to control the tendency to fibrinous exudation. Dr. Brocklesby, who published his observations on the administration of this salt in the treatment of acute rheumatism in 1764, and was, we believe, the first who employed it, gave it in large doses, usually to the extent of ten drachms or more in the twenty-four hours. Macbride, who wrote a few years later, speaks most highly of its effects, and of the necessity of giving it in large doses. In more recent times it has been employed in this disease chiefly by Martin Solon, Gendrin, and Aran; and Dr. Basham states, that he commenced to use it in 1843, before the results of Solon's experience had been published. He administers one, two, or even three ounces of the nitrate, freely diluted, in the twenty-four hours, with a remarkable amount of success, whether considered in relation to the duration of the paroxysm, or the immunity from the more serious concomitants of the disease. But he does not intend that the employment of the nitrate of potash should supersede the use of other remedies when they are indicated; the salt, he thinks, assists in restoring the proportion of the saline constituents, while the general constitutional treatment by calomel, opium, antimony, and col'icum, tends to lessen the excess of fibrine, and thus the rheumatic condition is controlled, and the patient safely guided to convalescence. Dr. Basham also employs the saline treatment of acute rheumatism epidermically, applying it directly to the inflamed parts by means of Markwick's epithem, the surface of which is first moistened freely with water, and powdered nitre then rubbed over the moistened surface until no more will be dissolved. Epithems thus prepared are applied to whatever part of the body is inflamed, and require nothing more than to have the spongy surface remoistened

with water once in about six hours. The author fairly tested the efficacy of this local treatment in several cases, and he states that, in each case, the part to which the salt was applied was relieved within twenty-four hours, the other parts continuing inflamed and painful till they were subjected to a like treatment, notwithstanding they were invested with moist fomentations. The paper is concluded with an abstract of seventy-nine cases, treated on these principles; out of this number there were eighteen cases of cardiac disease, and three deaths; in fifty-six males who recovered, the average duration, from admission to convalescence, was 31·10 days, and in twenty females who recovered, 34·15 days.

On a review of Dr. Basham's observation we must confess that we do not think he has made out a good case for his favourite remedy; he seems to have given mercurials, purgatives, diaphoretics, opiates, and the so-called specific colchicum, as freely as other practitioners; and, notwithstanding his chemical theories, we regard the nitrate of potash, as administered by him, merely as a useful refrigerant diet-drink. Its external application we believe to be useful, but not more so than the popular remedy, common salt, similarly applied.

The second essay is by Dr. Routh, on *The Causes of the Endemic Puerperal Fever of Vienna*. He introduces the subject with an account of the Lying-in Hospital of that capital, and the mode in which clinical instruction is conducted there. Two divisions exist in the hospital; in both, the management of the labour is intrusted to midwives and students conjointly; but in one, the first division, practical instruction is given in a private course where the operations are performed on the *dead body of some female*; while, in the other, the practical instruction is given, and the operations performed, on the *leather phantom*, and *not upon the dead body*. The mortality in the first division from puerperal fever was frightful, and at length became so notorious, that females refused to enter it, and the matter became a subject of government inquiry. Numerous theories were propounded to account for this difference, and various means of prevention tried unavailingly, until at length Dr. Semelweiss, the assistant physician of the first obstetric division of the hospital, was led to infer that the real source of the infection was to be found in the *hands of the medical men in attendance being contaminated with cadaveric poisons*; and the results proved the correctness of this view; for on compelling the students not to handle dead animal matter, and to wash their hands in a solution of chlorine prior to and after every examination made on the living subject, the number of

deaths at once fell to seven per month, the usual average of the second division. In a postscript to the essay, dated May 21, 1849, the following convincing statistics are given: In one division, (the first), in 1846 there were admitted 3354 females, and there died 459; in 1847 the admissions were 3375, and the deaths 176; and in 1848 the admissions were 3356, and the deaths only 45. From these facts Dr. Routh draws the following practical conclusions:

“In the first place, that—1. The puerperal fever of Vienna may be looked upon as an endemic fever.

“2. That it is produced by the direct application of poisonous cadaveric matters, introduced by the hands of the male obstetricians in attendance.

“3. That the cadaveric matters derived from the bodies of persons dead of typhus, erysipelas, puerperal, or other low fevers, are peculiarly dangerous; but that there is no evidence to show that any ordinary cadaveric matters may not produce it.

“4. That it does not appear to be either contagious or infectious.

“And in the second place, as the precautionary measures adopted by Dr. Semelweiss have produced such satisfactory results, that—

“1. Accoucheurs should as much as possible avoid making autopsies, and all contact with cadaveric matter.

“2. They should never attend any woman in labour in clothes which may possibly have been infected; but, *especially* if compelled to handle cadaveric matters, or other poisonous secretions from living persons, should, prior to any examination made *per vaginam*, not be satisfied with washing their hands most carefully, and subsequently greasing them, but also make use of a solution of chlorine, to disinfect the hand from any poisonous matters with which it may have become contaminated, before they presume to enter the lying-in bedchamber.”—p. 38.

The third communication is from Dr. Mackenzie of Glasgow; in it he adds a fifth case to those previously recorded of the presence of a *Cysticercus cellulosæ* in the anterior Chamber of the Eye. The case is reported with the usual care of this distinguished oculist. The operation he performed for the removal of the hydatid was as follows: The patient lying supine, and her left eye-lid retracted by the fingers of an assistant, he made a puncture with Beer's pyramidal knife, at the temporal edge of the cornea to the extent of $\frac{3}{8}$ of an inch. A little of the aqueous humour escaped as the knife was withdrawn, and the tail-vesicle of the hydatid became flattened, and much expanded between the iris and cornea. He immediately passed Schlagintweit's hook through the wound, seized the body of the hydatid with it, and easily withdrew the animal entire. Next day the patient felt quite well, saw perfectly

with the eye, and left the hospital in a week from the day of operation.

The next essay, by Mr. Rainey, on *The Minute Anatomy of the Lung of the Bird*, is written with the view of confirming by comparative anatomy the difference in structure which exists between the membrane lining the bronchial tubes, and that lining the air-cells of the lungs. That the walls of the air-cells are destitute of a lining of epithelium is still denied by some authors, who maintain that they are lined with ciliated epithelium. Amongst others Mr. Addison describes an epithelium in the form of round nucleated scales as lining them. In the present short paper Mr. Rainey, in opposition to these latter statements, brings forward the additional analogical argument, derived from the structure of the air-cells in birds, and in so doing gives an interesting account of the structure of their lungs.

Mr. Jones next communicates an extraordinary case of *Lesion within the Uterus, and partial Reparation before Birth*. The child was born with an unhealed wound, extending from the third dorsal vertebra across the scapula, along the back part of the humerus, to within an inch of the elbow: it only involved the integuments and was partially healed. It appeared to have been caused by a fall which the mother got about six weeks before her confinement. We agree with Mr. Jones in thinking it worthy of being recorded, from its bearing in a medico-legal point of view; as, had the same accident, occurring to an unmarried female, produced premature labour, and the death of the child followed, the presence of such an injury might lead naturally to the supposition that the child was destroyed by the mother, had we no proof that such an accident might take place in intra-uterine life.

Dr. Burd, of Salop, in *An Appendix to a Case in which an Ovarian Tumour was successfully removed*, published in the thirtieth volume of the Transactions of the Society, reports the subsequent conception and child-bearing of the female, with perfect recovery.

The seventh paper is an account of a *Case of Exfoliation of the Anterior Arch of the Atlas*, by Robert Wade, Surgeon to the Westminster General Dispensary. An illustration of a very rare and interesting fact in surgical pathology is here given: it occurred in an individual aged 35, and was the result of tertiary syphilis, the primary symptoms of which had been treated by mercury so as to produce profuse salivation. Exfo-

liations of the alveolar and palatine processes of the superior maxillary bone, and one of the spongy bones, had taken place three or four years after the primary symptoms. In about twelve years after the occurrence of the chancre for which he had been salivated, he was first seen by the author; he had then a sloughy ulcer occupying the greater part of the pharynx, and extending from the uvula backwards as far as could be seen; pus freely oozed on pressure from the centre of this, and on introducing a probe, a bare and rough bone was felt.

“The man complained of more or less constant pain in the back part of his neck, and he had occasionally attacks of very acute pain in the same part, with a rigid state of its muscles, which appeared to fix his head in a position which could not be altered without great suffering. Pressure over the upper cervical vertebræ could scarcely be borne. In these attacks, the application of leeches, followed by warm fomentations, afforded most relief; and the easiest position was obtained by the patient reclining on his right side, with the head carefully supported by a pillow. About two months after his application at the dispensary, I was hastily summoned to the man, in one of his spasmodic attacks, and found him in a state of great alarm, caused, he informed me, by his having, when raising himself in bed, felt something give way in the back of his neck, “with a loud crack like the report of a pistol;” a like report having been heard also by his wife, who was with him at the time. He became very faint, thinking his neck was broken, and that he was dying. On looking into his mouth, some coagulated blood was seen adhering to the ulcer. Between this time and May 28, 1846, the spasmodic attacks had been less frequent as well as less severe, on which day, when looking into the pharynx, I observed a small portion of projecting bone, and with very little difficulty removed the greater part of the anterior arch of the atlas, with the entire articulating surface, from the odontoid process of the axis.”—p. 66.

The man, who was a fireman and waterman, was able to resume his usual occupation in the course of three months, with the power of turning his head round nearly perfect, but of only bending it forward to a very slight degree; the throat remained sore, there being present a strumous-looking ulceration covered with a tenacious yellow secretion, and considerable depression in the situation of the exfoliated bone. The editor of the Transactions adds in a note that an analogous case is narrated by Mr. Keate, in the sixteenth volume of the Medical Gazette. To these we can add another, that in Mr. Colles' work on the venereal, page 138.

Mr. Toynbee's *Pathological Researches into the Diseases of the Ear* constitutes the next communication. It is in continua-

tion of his papers in the twenty-fourth and twenty-sixth volumes of the Transactions; and presents, in a tabular form, the results of his dissections of the ears in 915 individuals: of these 184 were the ears of persons known to be deaf; seventy of persons supposed to be deaf; 358 in the stage of incipient deafness; and 303 ears in a healthy state. The tables are preceded by some short introductory observations.

The ninth paper is a description of a *Case of Apoplexy of the Cerebellum*, by Mr. Dunn. As it does not present any novel features, we shall not delay on it, but proceed to notice the following essay, *Remarks on the Causes and Morbid Anatomy of Mental Diseases*, by John Webster, M.D. In the twenty-sixth and twenty-eighth volumes of the Transactions Dr. Webster had published the results of 108 autopsies of insane patients, and to these he adds, in the present communication, sixty-seven additional dissections. He prefixes to these some concise general remarks respecting the apparent or assigned causes of insanity, derived from a large number of lunatic patients in Bethlem hospital. His first observation confirms the well-established opinion, that lunacy prevails more among females than males; thus, of 1798 curable lunatics received into the institution, during six years ending the 31st of December, 1848, 1094 were females, and 704 males. From the statistics of these cases it is also proved that, of the two sets of causes, moral and physical, which psychologists recognise as producing insanity, the former prevails more among males and the latter among females. This is corroborative of the views put forth by Dr. Churchill, in his communication in our present Number; as regards hereditary predisposition, nearly one-third of the entire number were ascertained to have such tendency, but the females afforded the larger proportion of instances. The following observations on the curability of insanity are interesting:

“Respecting the curability of insanity, I would remark, that, in male lunatics, the mental disease, *cæteris paribus*, proved more curable where the attack was produced by pecuniary embarrassments than it did when originating from any other moral cause; and next where the malady arose from religion. But amongst female lunatics, the cases in which love was the assigned cause occupied the first rank in the ratio of curability; and these were followed by the cases due to religion. Again, with reference to physical causes producing mania, the attack seemed most curable when it arose from intemperance, in male insane patients; but, in females, a more favourable prognosis might be predicted in cases of puerperal insanity than in almost any other variety of mental alienation.”—p. 118.

The morbid appearances in the sixty-seven dissections are next detailed at length, but the character of the insanity during life is not given in any instance, which we regard as a great omission, and one which lessens much the pathological value of Dr. Webster's laborious report: the merest outline even of each case would have rendered its study much more useful and interesting, and might serve as a basis for obtaining, ultimately, correct views on one of the most obscure points in pathology, the connexion between the symptoms of insanity and morbid changes in the system. The following is Dr. Webster's summary of the alterations of structure observed within the head in 175 autopsies of lunatics reported by him in his present and previous communications in the *Medico-Chirurgical Transactions*:

"In 145 cases the pia mater was infiltrated. In 127, there was turgidity of the blood-vessels. In 120, fluid was effused in the ventricles. In 62, the arachnoid coat was thickened and opaque. In 45, the colour of the brain was altered from its natural tint. In 32, bloody points were noticed on the cut surfaces of the medullary substance; and in 32 cases, blood was found effused within the cranium; besides various other morbid alterations of structure already enumerated. From these data it therefore unequivocally appears, that the diseased changes which pathologists may generally expect to find on examining the heads of lunatics, in a great majority of dissections, will be: 1st, infiltration of the pia matter; 2nd, turgidity of the blood-vessels of the brain and membranes; and 3rdly, effusion of fluid in the ventricles."—p. 155.

The next paper is by Dr. Risdon Bennett. It is an account of a *Case of Hemiplegia, associated with great Hypertrophy of the Heart, and terminating by Rupture of the Aorta, producing dissecting Aneurism*. The patient, a man aged 52, died about two months after the paralytic attack, the immediate cause of death, which was sudden, being rupture of the aorta, with effusion of blood between its coats and into the left pleural cavity. On *post mortem* examination two clots of blood were found in the brain, one in the middle of the left corpus striatum, and the other in the centre of the left half of the pons Varolii, both associated with softening of the surrounding brain. The arteries at the base of the brain were loaded with atheromatous deposit. The rupture of the aorta was situated immediately beneath the origin of the subclavian artery; it was three-quarters of an inch in length, and nearly transverse. The whole of the aorta was thickly studded with atheromatous deposit, and it was through a patch of atheroma that the rupture took place. The blood was effused from the point of rupture

downwards, between the coats of the aorta, splitting it up as far as the iliacs, but it nowhere occupied more than three parts of the circumference of the vessel. The heart was much hypertrophied, and coloured drawings of the condition and appearance of the aorta are given.

Mr. Wright next communicates a case of *Popliteal Aneurism in which the Femoral Artery was tied after the Sac had burst*. The operation was successful, and the author states that it was so after the failure of compression to effect a cure. To the latter statement we must demur, for the only plan tried to effect compression was by the application of the pad of an Italian tourniquet; yet, notwithstanding the inefficiency of such an apparatus, it is reported that the tumour seemed to diminish in volume, felt more solid, and lost in part its strong pulsation, after only four days' use of it; thus distinctly proving, that had the improved plan, now so generally adopted, been employed, and for which the profession is, we fear not to make the claim, indebted to the skill and perseverance of Irish surgeons, the danger of a painful operation would, in all human probability, have been avoided. Indeed we were much surprised that the surgeon major and the surgeon of the third battalion of grenadier guards, under whose care the patient was, should not have been acquainted with the clamp apparatus, at that time, March, 1848, in use here, and the advantage of employing two instruments.

The last paper in the volume is an account of the *Discovery of Oxalic Acid in the Blood*, by Dr. A. B. Garrod. It was obtained from blood procured from the vessels of the brain of a man aged 65, who had been afflicted with chronic hiccup and vomiting, and at length died dropsical. It is the first published instance of this acid having been detected in the blood; and Dr. Garrod has, since this case, found it in five other instances. When the fact is more fully investigated it may prove of some pathological value.

Lectures on Electricity and Galvanism, in their Physiological and Therapeutical Relations. By GOLDING BIRD, A.M., M.D., F.R.S. London, 1849. 12mo. pp. 208.

THE subject matter of this volume consists, as the preface announces, of a series of lectures, which were delivered before the Royal College of Physicians of London, in the spring of 1847, by Dr. Bird. They were reported soon after in the

pages of the Medical Gazette, and the author now publishes them in a separate form, having first carefully revised the entire, and added many new illustrations.

The preliminary education of most medical men secures to them the possession of a considerable amount of information upon the kindred sciences of electricity and galvanism; but it must be confessed that agents so very important, so ever present, and capable of exercising such powerful influences upon the actions of the human system, in conditions of health and disease, have not received from practical men that amount of careful experimental trial and study to which they seem fairly entitled. Hence we hail with pleasure this effort of a talented hospital physician, who has enjoyed peculiarly advantageous opportunities of observation, to bring prominently before the profession the results of his experience in this most interesting department of physical science.

These subjects, too, have received very considerable attention of late, as well from the public at large as from medical men in particular, chiefly from the impression being very general, that many of the extraordinary and mysterious phases of disease, which are observed in both the animal and vegetable kingdoms, have their origin in, or are mainly owing to, some altered or disturbed state of atmospheric electricity. Our author has been engaged chiefly in endeavours to extend the use of this agent in a therapeutical point of view; but whilst so doing, he has not failed to make such general observations of facts, and such special improvements in apparatus and modes of application, as will be likely to aid very materially in the future study of the phenomena of the science.

After some very judicious introductory remarks, Dr. Bird commences his subject by briefly enumerating the commonly received opinions of the complex nature of the electric fluid, and the usual methods adopted for exhibiting it in action by means of inorganic and metallic substances. He then proceeds to demonstrate its existence in organic matters and in the animal frame, not only in the torpedo and silurus—in which, from its being found in large quantity and a high state of tension, owing to the possession of particular organs, its presence is readily admitted—but in man and other animals as well. Galvani's well-known experiment is detailed, and his theory of free animal electricity, founded upon it, noticed, together with the somewhat different conclusions arrived at by his countryman, Volta, from the same premises. To dwell upon these would be quite unnecessary; but we may mention that, when speaking of free animal electricity, Dr. Bird takes occasion to

do justice to the merits of Professor Aldini of Bologna, the pupil and nephew of Galvani, who, adopting fully the views of his illustrious uncle, came to England, and so early as the year 1803 delivered a course of lectures, and exhibited some extraordinary and striking experiments, in which the electrical phenomena were excited by manipulating with animal matter only. Many of the propositions and conclusions of this talented professor are of great interest, and anticipate most remarkably the late researches of Matteucci.

The existence of electricity in the animal frame being proved, it next becomes necessary to inquire whence it is derived, and for what purpose it exists there?

“Electricity is recognised in two distinct forms in animals: one, in which this agent is in a neutral and static condition, that is, in a state of combination, and therefore of rest, capable of being resolved into its two component elements by various mechanical and chemical processes; and a second, or dynamic condition, electricity in motion, or in the state of current.”

The former, Dr. Bird says, we have no means, in the present state of our knowledge, of explaining the origin of, save by referring it to the fiat of Omniscience; the second is evidently not anything superadded to the body, but is merely the electricity normally existing in a state of rest or neutral condition, decomposed by some cause or series of causes, by which its positive and negative elements are separated, their attempts at reunion giving rise to the currents alluded to. Quite sufficient cause to account for these can be found in the many chemical changes which are constantly occurring in the animal body; the union of carbon with oxygen, which takes place so largely, not only in the lungs during the process of respiration, but very extensively also over the entire capillary system,—the oxygenation of hydrogen, phosphorus, and sulphur, elements constituting important and essential ingredients of our food,—are so many sources of free electricity.

With respect to the purpose for which electricity may be supposed to exist in the animal frame, we cannot say that any very new light is thrown upon a subject avowedly obscure.

“Secretion and nervous agency have always been the favourite phenomena which electricity has been called in to explain, and with some considerable appearance of probability. Dr. Wollaston, thirty-six years ago, first suggested, from the resolution of salts into their elements, under the influence of feeble currents, that secretion depended essentially upon the electric state of the secreting glands. He thus regarded the kidneys as constituting the positive, and the liver the negative electrodes of the electric apparatus of the body.

“We must admit, however, that a great hiatus exists in every argument which assumes that nervous force and electricity are identical, from the fact that, delicate as are our tests for this agent, it has never been actually detected traversing the nerves.”

Dr. Bird then proceeds to notice the very ingenious theory of muscular contraction, promulgated by Prevost and Dumas, and the remarkable experiment of Doctor Wilson Philip, of dividing the pneumogastric nerves in the neck of a rabbit, and in some degree replacing the *vis nervosa*, and causing the process of digestion to be continued, by the passing of electric currents in the direction of the divided nerves; and after showing where these experiments failed to prove as much as their respective authors anticipated, and that the results in the latter case are chiefly owing to some chemical action which is excited in the stomach, he proceeds:

“There is connected with this hypothesis of Dr. Philip a most interesting and important observation of Professor Matteuci, to whose ingenuity and patience we are so largely indebted. This philosopher introduced a plate of platinum into the stomach of a living rabbit, placed another on the liver, and connected both with a galvanometer; the needles instantly traversed an arc of 20° , proving the existence of a powerful current between the liver and stomach. This, it may be observed, shows the existence of a current, but does not prove whether it is to be regarded as an effect or a cause of the chemical changes alluded to; for it has been already shown, that when an acid and alkaline fluid are separated by permeable structures, they actually develop a current of electricity; and as the stomach contains an acid, and the liver an alkaline secretion, this might afford an explanation of the current observed by Matteuci; and had the experiment ended here, this plausible objection would have been a fatal one. But the nerves and vessels passing into the abdomen were divided above the diaphragm, and in an instant the needles of the galvanometer deviated to 3° instead of 20° ; and on cutting off the head of the rabbit by a sudden blow, even this little deviation nearly completely vanished. Nothing could be more conclusive than this experiment, in proving that the electric current was the cause, not the effect, of the chemical metamorphosis of the saline ingesta, whose decomposition furnished acid to the stomach and alkali to the liver.”

The subject of the origin of animal heat next occupies the attention of our author, and whilst admitting the correctness of Liebig's theory, and acknowledging its capability of accounting for the production of much of the heat of the body, but not the entire, he throws out the suggestion that electricity may be a very considerable source of supply. This hypothesis is strengthened by the detail of some very ingenious experiments

which bear upon the subject; and the lecturer proceeds to notice the existence of electric currents in many of the tissues of the body, and, without stating that such currents are absolutely identical with *vis nervosa*, assumes that they bear to each other the relations of cause and effect. An illustration of his meaning is derived from the effects of an electric current traversing a helix of wire, and converting a bar of iron contained within it into a powerful magnet; and after a series of deductions founded upon several experiments made with this magnet, he asks:

“May not one of the uses of the electricity so freely developed in the body, especially that existing in the muscles, be to excite in the nervous cords the *vis nervosa*, just as currents, if passing near a bar of iron at right angles to its axis, excite magnetism. May not this *vis nervosa*, or nervous polarity, excite the contraction of a muscle, without actual contact with its fibres (for we know that the fibrillæ of nerves lie upon, but do not communicate with the ultimate fibres of muscles), just as the invisible lines of force emanating from the bars of a magnet act upon the suspended bundles of wire or iron filings? Lastly, may not such nervous force again induce electric currents in any glandular or other organs, just as magnetism in motion will re-excite electricity? Thus accounting for what cannot be questioned, the existence of electric currents in certain organs, exclusively excited by or depending for their existence upon the integrity of the nervous influence of the part.”

The author then makes some remarks upon diamagnetic phenomena, and proceeds to examine the direct and indirect influence on organic structures, of electric currents artificially excited. He warns his readers that a successful examination of this question can only be looked for when very weak currents of electricity are employed; as by using those of high tension, the mechanical violence produced by their traversing organized structures almost completely masks their physiological effects. He proves too that it is not necessary that a current of electricity should traverse the whole extent of a nerve to its distribution in the muscles, in order to produce contractions; if merely a portion of the trunk of the nerve be included in the current the contractions will occur. This experiment he considers one of much physiological importance, as it would appear to point out a further relation between the *vis nervosa* and electricity.

That the nerves undergo some decided change in their organism, by the passage of electric currents, seems pretty evident; for if a current of electricity be made to traverse the coil of a galvanometer, and then to pass through the prepared leg

of a frog, in such a direction that the positive electricity may enter the limb by the sciatic nerve and leave at the toes, as might be expected, contractions instantly occur, but as instantly cease, although the electricity continues still to traverse the limb, as shown by the needle of the galvanometer. When contact is broken with the battery, contractions again occur, although, as indicated by the galvanometer, the current had ceased to traverse the limb. If, however, the current be allowed to traverse the nerve for twenty minutes or longer, no contraction will be manifested on breaking contact, the change produced in the structures being permanent, and they are left paralysed to the further influence of the agent. This change Dr. Bird supposes to consist in part of some alteration in the normal electricity of the tissues traversed by the current, and in part of some physical change in the ponderable atoms.

The effects too of an electric current upon a nerve, and consequently upon the muscles it supplies, differ remarkably according to the direction which it pursues. This observation is one of the greatest interest and importance in a therapeutical point of view, and its not having been hitherto sufficiently attended to in the employment of electricity as a remedial agent, will explain many of the discrepancies in result reported by observers.

“It must not be forgotten that mere muscular tissue is susceptible to the stimulus of electricity, quite independently of its passage through the nerves supplying the structure. Hence when an electric current is transmitted through a limb transversely to the direction of the nervous supply, contractions will occur from the direct influence of the current on the muscular tissue. It appears, however, that a more energetic current is required to exert this direct influence, than when it is allowed to reach the muscles in the presumed course of the *vis nervosa*, or, in other words, in the direction of the nervous ramification. Muscular contractions are developed in the most perfect manner when the positive current travels the limb in the presumed direction of the *vis nervosa*. . . .

“Professor Matteuci has termed the shock or contractions produced by the discharge of an electric jar, or the passage of a voltaic current through the muscular structures, independently of the nerves, the *idiopathic shock*; whilst he has applied the term of *sympathetic shock* to the influence on the muscles conveyed by the current traversing the nerves. Thus, when an electric jar is discharged *down* the arm, both these shocks are produced; whereas, when discharged *up* the arm, that is, in a direction opposed to the direction of the nervous ramifications, the idiopathic shock is alone felt. In the former case the sensation experienced, according to these views, is twice as intense as in the latter. Hence, if with the right hand

a person touches the outside or negative coating of a charged jar, and with the left touches the knob or positive surface, he ought to experience a much more intense sensation in the right arm than in the left; for, in the former, the positive electricity runs down the arm, and produces both the idiopathic and sympathetic shocks, whilst, in the latter, the idiopathic shock is alone experienced."

We are now conducted to the more practical part of the work, that in which Dr. Bird makes us acquainted with some of the results of his experience of the employment of electricity as a therapeutical agent. This experience has been the result of many years' careful clinical observation in the wards of Guy's hospital. The authorities of that institution set apart a room for the special administration of electricity, clinical clerks were appointed to record the cases, and the whole was placed under the direction of Dr. Bird, and remained in his hands during eight years. From the large mass of evidence thus placed at his disposal, he has selected some of the most interesting cases, and by their aid illustrates several points of practical importance; of these we shall notice a few.

From having witnessed the effects of feeble currents of electricity excited by a single pair of plates of silver and zinc, he was led to believe that such currents, if kept up for a long time, —*care being taken that the positive current traversed the limb in the direction of the ramifications of the nerves*,—would be the most effectual way of applying this remedy in certain cases of paralysis, namely, in forms of this disease where, after the removal of the immediate cerebral lesion by treatment, the palsied muscles do not recover their power; and he had sufficient evidence from repeated trials to convince him that such was the fact.

But whilst submitting this idea to the test of experience an effect was produced, and a difficulty arose, which put an end to the hope of being able to keep up the passage of a current, of even low intensity, for a lengthened period: this was the formation of a peculiar slough beneath the zinc plate of the apparatus employed, varying in depth in proportion to the length of the period of its application: this slough becomes detached very soon after the discontinuance of the application of the plates, and always leaves a healthy discharging surface. Dr. Bird takes advantage of a phenomenon so constantly occurring, to recommend this as a desirable means of producing counter-irritation when required. He says:

"We are often anxious to produce a persistent discharge from some part of the body, in cases where an issue or seton, or discharge from the moxa or actual cautery, would be desirable. Now the

knife for the issue, the needle for the seton, and the ignited tinder or red hot iron for the moxa,—all have their terrors for timid patients; and there is often the greatest unwillingness to induce patients to use such means. There are, therefore, considerable advantages in the use of a plan which, while it is perfectly competent to produce a copiously discharging sore, shall at the same time not excite the alarm of the most sensitive patient. Now the effect noticed in the case just related points out such a means. It was long ago observed by Humboldt, and afterwards by Grapengiessiek, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. But neither of these philosophers have [has] noticed the effects arising from a continued application of the plates. As I believe this *electric moxa*, as I have termed it, is often of very great value, I may be excused giving more minute directions for forming it. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver; connect them by a copper wire, and cover them with a common water-dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with nitrate of silver. In forty-eight hours a decided eschar will appear, which (still keeping on the plates) will begin to separate at the edges in four or five days. The plates may then be removed, and the surface where the silver was applied will be found to be completely healed. A common poultice may be applied to the part, and a healthy granulating sore, with well-defined edges, freely discharging pus, will be left. During the whole of this process, if the patient complains of pain at all, it will always be referred to the silver plate, where, in fact, the blister is rapidly healing, and generally not the slightest complaint will be made of the zinc plate, where the slough is as rapidly forming.

“I have now repeatedly used this mode of exciting a puriginous sore on different parts of the body, both in hospital and in private practice, and it has never in any instance failed. I strongly recommend it to your notice, where it is important to avoid the use of means more alarming to the patient. I certainly know of no other plan by which an equally effective discharge can be obtained, except by the use of the moxa or actual cautery.”

It was found in subsequent trials that in forming a slough, one blister, placed where the slough was to be formed, in general proved sufficient, provided the surface of the skin to which the silver plate was applied was previously bathed with a little salt and water, so as to make it a good conductor.

Dr. Bird accounts for the production of these effects by supposing a decomposition of the saline ingredients of the

fluid effused upon the blistered surface to take place; the sodium of common salt being set free at the silver surface, and by oxidation becoming soda, while the chlorine is evolved at the zinc surface and there forms chloride of zinc, which exercises its usual escharotic action. He also proposes to turn to account the fact of the sore beneath the silver plate healing so rapidly, and suggests the application of an apparatus of the kind described to aid in the healing of indolent ulcers, quoting many cases in proof of the efficacy of such treatment. Mr. Hinton, Dr. Bird's assistant, had also used the apparatus with success for the destruction of small scirrhus masses.

The author proceeds to record various other therapeutic effects of electricity, noticed both in his own and in the practice of others; its power of exciting muscular contractions generally is alluded to, and its special applicability in producing a purgative effect by acting upon the bowels, in inducing uterine contractions so as to arrest flooding, &c., and in exciting the bladder to expel its contents in cases of paralysis, is dwelt upon.

In no other disease has the employment of electricity been so absolutely empirical as in paralytic affections, and in none may we expect more benefit to follow a proper selection of cases for trial, and a scientific application of the remedy: our author remarks, "in none have more triumphant success and more bitter disappointment followed its use."

"Paralysis is so general a term, indicating so vast a variety of pathological conditions, that no opinion whatever can be given of the utility of the agent in question, without being more precise in our definitions. One general remark, however, I may venture to make, that under no *circumstances whatever have I ever seen any of the modifications of electricity of use, in the treatment of paralysis attended with permanent contractions*, a condition so frequently observed in the upper extremities. Indeed, so far from sanctioning the use of electricity in any of its forms in such cases, I feel convinced that it may even do mischief, and have on no account ever ventured to employ it. As a general rule, I would especially guard the practitioner against using this remedy in any form of paralysis, where a source of permanent irritation exists in the brain or spine."

Dr. Bird then gives the results of his trials of this remedy in cases of paralysis from various causes, as from lead, rheumatism, cold, hysteria, anemia, &c. In most of these the amount of success was very considerable, and well warrants his recommendation of this powerful agent. His experience agrees re-

markably with that of Dr. Neligan(*a*), and of others who have used this agent in different forms of paralysis and preceded him in publishing the results, when he concludes that it is more likely to prove efficacious where a single muscle or a class of muscles have become affected from a local cause, than in the treatment of hemiplegia or paraplegia from positive organic lesion of the cerebral or spinal centres. We are warned indeed against its incautious employment in such cases.

There are several other affections in which the therapeutic employment of electro-galvanism is noticed in laudatory terms; for the account of these we must refer to the book itself; of chorea especially, and amenorrhœa, some very interesting cases are recorded, and decidedly beneficial results have been obtained in their treatment. A case is also given in which the electric current was successfully employed to keep the system roused during the persistence of the dangerous effects of an over-dose of laudanum. Speaking of amenorrhœa, Dr. Bird says:

“In electricity we possess the only really direct emmenagogue with which the experience of our profession has furnished us; I do not think I have ever known it fail to excite menstruation where the uterus was capable of performing this function. Disappointment will, however, most certainly result, if we have recourse to electricity merely because a girl does not menstruate; and we must never lose sight of the fact that, after all, the large majority of cases of amenorrhœa depend upon an anemic condition, and the patient does not menstruate simply because she has no blood to spare. Nothing can be more ridiculous than applying electricity, or any other local stimulus, to the uterus, when chlorosis exists; the first great indication will be to restore general health, give iron to make up for the previous deficiency of that element in the blood, and then, and not before, think of stimulating the uterus.” “The mode in which electricity has been generally employed has been by transmitting a dozen shocks from an electric jar, holding about a pint, through the pelvis; one director being placed over the lumbosacral region, the other just above the pubis. In private practice, in which the employment of the cumbrous electric machine is very inconvenient, I have substituted with advantage the induced currents of the electro-magnetic apparatus, the conductors being placed as before. The alternating current from the common coil machine may be employed in these cases, as the electricity seems to act simply as a local stimulant quite independent of the production of uterine contractions. Dr. Collins of Dublin seems to prefer the electro-magnetic current to the shocks of the ordinary electric jar. I believe it is a matter of complete indifference which we employ.”

(*a*) *Edinburgh Monthly Journal*, April, 1846; see also Mr. Donovan's essays in the third volume of our new series, pp. 102, 291.

Dr. Bird does not notice a mode of application of electricity which we have seen employed with very good effect, in cases of paralysis from local causes, as, for instance, that frequently following dislocation of the humerus, viz., the introduction of several needles (acupuncture), and the passing of electric currents through them, which may be termed electropuncturation. This is certainly sometimes a severe remedy, but in many cases a highly beneficial one.

We now take leave of this highly useful and practical work, recommending its perusal to our readers, as being likely amply to repay them; it is embellished with many diagrams and woodcuts, and is altogether creditable to its author. We could have wished that, when he came to *print* his lectures, he had taken more notice of the merits of other labourers in the same field, who have earned considerable reputation by original research and valuable suggestions.

Essays on Syphilis. Essay 1. Syphilitic Sarcocoele. With two coloured Plates. By JOHN HAMILTON, Surgeon to the Richmond Hospital. Dublin, Fannin and Co. 1849. 8vo. pp. 40.

COMMUNICATIONS on special branches of medical science are not without value, proportioned to their practical importance and merit. The above Essay is, therefore, of peculiar interest to the surgeon, as affections of the testicle constitute a class of diseases frequently difficult of discrimination, and particularly so as regards "sarcocoele." This, in the ordinary acceptation of the term, a disease chronic and insidious in growth, and extremely varied in character, is, in the vast majority of instances, accompanied by a morbid state of constitution, congenital or acquired, and often not accurately defined. The subject of the present Essay is what our author terms, "syphilitic sarcocoele," considered under two varieties, "the simple syphilitic sarcocoele," and the "tuberculo-syphilitic sarcocoele;" but it appears to us that, for reasons we shall by-and-by mention, a more appropriate term for the latter would be "complicated syphilitic sarcocoele."

The local characters of these specific forms of sarcocoele, the constitutional symptoms attendant on each, their pathology and their treatment, as described in the text, will be read with much interest. In the references given to the several authors, who have treated on the subject, the names of Benjamin Bell, of Mr. Lawrence, and Professor Syme, have been, we are satisfied, unintentionally omitted.

Bell's description of "the swelling of the testicles, from lues venerea" (the "simple syphilitic sarcocele"), is excellent, and his differential diagnosis not less so. Mr. Lawrence's paper, also, on "fungus of the testicle," which is admitted to be an occasional sequela of the "complicated syphilitic sarcocele," specially deserves notice, as he was the first to establish a mode of treatment based on sound pathological principles. Again, Professor Syme's remarks on the same subject, with a view to further modification of treatment, reflect too much credit on his industrial pathological research not to entitle him to merit a passing eulogy; and we know the writer of the Essay too well to think that he will attribute our notice of the omission to other than proper motives. In claiming for Irish surgery the high position to which it is fully entitled, we will not deny the meed of approbation due to the labour of others.

The "simple syphilitic sarcocele" of our author is identical with the "swelling of the testicles from lues venerea" of Bell, the "venereal inflammation of the testicles" of Sir Astley Cooper, the "purely venereal swelled testicle" of Professor Colles, and the "syphilitic orchitis" of Mr. Curling. The subject, however, is treated more in detail in Mr. Hamilton's Essay. There is a great similarity in the description of the attendant local and constitutional symptoms given by these authors, and that in the text. The fact is, two distinct forms of this disease occur in practice, the acute and the chronic; the acute, so characteristically painful that we are not disposed to discard wholly, as being without foundation, the opinion advanced by Sir Astley Cooper, though hypothetically so, "that when the venereal poison affects the testicles it probably attacks the tendinous structures," &c. We would remark, also, that we have met with this affection of the testicles as an isolated symptom, we should, perhaps, say, as an isolated *local* symptom, as, on accurate investigation, some trace of venereal hectic will be found present, to which, in diagnosis, we ought to attach much importance; much more frequently, however, it is, as our author states, associated with the cutaneous symptoms noted, namely, "vesicular syphilis," or "pustular syphilis," not "papular" (unless "tubercular" is to be classed with the latter;) but its most frequent companion is "squamous syphilis." We do not deny, however, that, under the influence of constitutional syphilis, cutaneous eruptions may be developed, which will assume any one of the elementary forms of inflammation characteristic of diseases of that tissue. We have met with this form of venereal affection of the testicles in some few instances in the child. It was always accompanied by effusion into the tunica vaginalis, of varied amount, always engaged

both testicles to a variable extent, and was always associated with the usual train of symptoms attendant on infantile syphilis.

At present a child, aged six months, is under our treatment, whose mother brought him to us about six weeks back. The countenance of the child, the aphthous ulceration at the angles of the mouth, the condition of the fauces, the voice, the snuffle-breathing, and the ordinary cutaneous complication, together with general emaciation, left no room for hesitation as to the nature of the disease. Here both testicles were engaged. The left was enlarged to about the size of a hen's egg, the right to that of a plover's. There was effusion into the tunica vaginalis of the left. In fact, all the essential local features of "simple syphilitic sarcocele" were present. Now, all symptoms have given way to treatment; the skin has acquired a healthy aspect; the child has become plump, and the testicles are nearly of normal size and consistence. In no case could syphilitic cachexia be more fully developed. The symptoms have yielded to small and regularly continued doses of mercury with chalk, the local application of camphorated mercurial ointment, the regular support of the testicles, and the use of the tepid bath, combined with nutritious diet suited to the age of the child.

Many circumstances occur to us, as regards treatment, which we could dwell on, were this a fitting opportunity, and amongst others the great value of support to the special organs engaged, and the necessity for the prolonged and gradually suspended use of the specific remedy.

The "tuberculo-syphilitic sarcocele" is an affection far more serious in its nature than that which we have been speaking of. It is, as our author states, much more frequent in occurrence, and the integrity of the testicles is at stake. Its characteristic features are described by Professor Colles in his usual simple and satisfactory style; and the description by our author of the local and the constitutional symptoms are well worth perusal. Mr. Colles speaks most true to nature in his account of the local characters. "The condition of the testicle is," he says, "very different from that which we may consider a purely venereal swelled testicle, for the swelling in many such cases does not involve in one common mass both the epididymis and the body of the gland; nor does it, in general, acquire the same magnitude as the purely venereal swelling of the testis. In such cases we not unfrequently find, on a careful examination, one or two points into which the end of the finger appears to sink, as if a fluid or a small cavity existed beneath the skin."

To us, where the body of the testicle is engaged, it feels as if a hole had been punched through the tunica albuginea at

the point at which the morbid action is progressing; but for a full and truthful description of it we must refer to the *Essay* of Mr. Hamilton.

For this affection we have suggested the term "complicated syphilitic sarcocoele," as a more appropriate one than that of the "tuberculo-syphilitic sarcocoele." We wish we could exclude the word "syphilitic" altogether, as unquestionably we have met with the disease where no syphilitic taint could be traced, and in more than one case where it never could have existed. The true cause of the disease we believe to be the poisonous effect of mercury, exhibited where the constitution was naturally bad, or this effect engrafted on a constitution naturally good, but shattered by mismanagement, as well attributable to patient as to surgeon. "The disease of the testicle is the mildest of his complaints," says Mr. Colles. It is not an isolated symptom, and the radical cure of these complaints is the problem to be solved. Much might be said on this subject of treatment, and we wish we could speak sanguinely respecting it. We regret to say we have seen too many unfortunate cases fall victims to general anasarca, to ascites, accompanied by diseased liver or spleen, dysentery, and other complications. The question of the exhibition of mercury is a most important one, and the mode of administration equally so. No allusion is made by the author to the iodide of iron, which we have found of invaluable benefit in "venereal cachexia," with which the disease under notice is so often associated.

An excellent description of the pathological changes observable in these affections of the testicle is given by Mr. Hamilton. These are also well described in the catalogue of the anatomical and pathological Museum of the Park-street School of Medicine in this city, which was published in 1843 by our lamented friend Dr. Houston^(a), and under the class comprising these special diseases, will be found in it the description of preparations illustrative of their varied stages, preparations not to be surpassed in interest and value in any museum extant^(b).

In conclusion, we beg again to thank our author for his

(a) This splendid collection now forms the nucleus of the museum of Queen's College, Belfast.

(b) We have in our possession at present two testicles, removed after death from a pensioner who fell a victim to what we would term "mercurial cachexia," unconnected with any traceable syphilitic taint. The body of one was normal; in the epididymis was a tubercular cavity about the size of a hazle-nut; in the other numerous minute tubercles were found throughout the body at various points of the tendinous septa.

essay,—a valuable and timely contribution to surgical science; and we look forward with pleasure to its being followed by others, as we fully agree in opinion with him, that “an hospital surgeon of moderate observation and diligence cannot be long without discovering, in the mass of diseases submitted to his care, something which really is, or that he believes to be, an addition to the knowledge already existing.”

The Physiognomy of Diseases. By GEORGE CORFE, M.D., Resident Medical Officer at the Middlesex Hospital, &c. London, Nisbet and Co. 1849. 4to. pp. 147.

THIS is a work upon which there has been evidently bestowed a considerable amount of time, labour, and industrious observation; but with what practical results, with what benefit to the public, remains to be ascertained. The author observes in his introduction:

“In the course of nearly eighteen years’ residence in the Middlesex Hospital, where twelve or thirteen thousand patients are annually relieved, it has often struck me, amidst the vast number of cases of disease by which I am surrounded, that such stores of information as are therein presented to the eyes of students ought not to be allowed, as it were, to run to waste; but that gleanings might be largely collected, in order that the general features of this mass of knowledge might be recorded in a somewhat profitable manner.”—p. 1.

A whim, a strange fancy, a highly imaginative disposition, may, amidst so many opportunities as the author enjoyed, find ample scope for gratification; but then comes the question, where is the “quid utile,” or what is the “cui bono” of all this patient physiognomical research? For our own part, we candidly confess we cannot tell. Might not so much time, and such extensive observation, have been bestowed to much greater advantage in the elucidation of the much more tangible symptoms of disease, and in the more precise announcement of those plans of treatment which had been adopted for their relief? We confess, that we regard the declared object of the work before us as a step in the wrong direction. This is not the age for speculative theories; the absurd reasonings of the schoolmen have passed away, and we trust for ever, whilst in their stead we rejoice to witness the establishment of doctrines founded on indisputable facts. We live in an age of demonstration; and theories in medicine, no matter how ostentatiously or *religiously* paraded, have no further claim on our consideration than in

so far as they bear the rigid test of experimental investigation. Furthermore we solemnly protest against the attempt to enlist the sympathies and interest of any great and influential body of readers, by an exhibition of religious truths. Pure and undefiled religion is not hostile to any, even the highest scientific attainments to which the human mind can aspire, but we cannot help thinking that religion becomes sometimes wounded "in the house of its friend," by its irrelevant introduction into subjects with which it has no direct connexion. What, we would ask, has the note, so replete with scriptural quotations, which figures in the very first page of the work, to do with the "physiognomy of disease"? or where is the connexion between the subject the author treats of and his confession of faith, set forth in the second page? We cannot avoid the painful conclusion that great religious truths lose their solemnity, by being associated with the disgusting narrative or the low jest. The author's belief in a superintending Providence, and "his workings in nature, providence, and grace," are but ill associated in the same page with a London butler, "overrun with pediculi and pruriginous eruptions;" or with the married sempstress, who laboured under "the most inveterate form of scabies and itch combined, whose employment was to attend daily in one of our largest hotels at the west end, to keep in order the stock of linen;" or with the Irishman, who, after having swallowed down a black draught, said, "Thank you, your honour; that's the first bit of victuals I've had these two days."—p. 2.

The author professes himself a believer in the physiognomical views of Lavater, and endeavours to apply his doctrines to the classification of disease. He observes:

"The study of physiognomy was much attended to amongst the Greeks and ancient philosophers, but was not revived until the middle ages. Baptista Porta, a physiognomist of great eminence, wrote a treatise 'on the physiognomy of plants and of birds.' The 'Magia Physiognomica' of Gaspar Schottus, the work of Boyle, and lastly, the elaborate treatise of that singularly gifted author, Lavater, have reduced the subject to some definite and scientific principles."—p. 4.

Again, speaking of Lavater, he says:

"As to the physician, he remarks, 'the physiognomy of the patient frequently instructs him better than all the verbal information he can receive. It is astonishing how far physicians have carried their sagacity in this respect.'"

The author more openly states that the object he has in view in this publication:

"Is to bring forward the assimilation or likeness, certainly not family likeness, of diseases to each other: for though they are not in any respect akin to each other but in the general name, disease,—as one inhabitant of the earth is no relation to his antipodes, excepting in the general term, man,—yet the portraying of the varied lineaments of disease, which assimilate in a general character, may open the path a little wider to, and thus facilitate, the clinical student in his studies of internal diseases."—p. 6.

Again:

"So close is the knitted texture of head and body, that it is a rare occurrence to be enabled to designate a disease purely cerebral, or wholly thoracic. A man may rupture a cerebral artery from mental or bodily exertion; he may have pneumonia from a sudden chill of his body, and so forth; but as the disease, no matter from what origin, is concentrated in the brain, or in the lungs, and as the chief symptoms seem to converge to *that* part, so we give the name of the disease to the distress in that organ, especially in the terms 'apoplexy with oppressed breathing,' or 'pneumonia with delirium,' &c. &c. This being premised, the classification of the higher diseases, according to their physiognomy in the first glance of the eye, will be readily admitted."—p. 6.

We really wish we could decipher the real import of the foregoing extract, we confess our obtuseness of intellectual comprehension in this respect, and must only hope that our readers may be more favoured, and consequently more fortunate in their mental endowments. Probably the author might be able, according to our "physiognomy in the first glance of the eye," to diagnose whether our dulness of comprehension "were purely cerebral" or not. As he has, however, declared this to be "a rare occurrence," we would fain hope that our professed inability to comprehend fully the enunciation of the author's aim, may not be considered chargeable on our mental imperfections. We shall now present our readers with the author's

"CLASSIFICATION OF DISEASES.

CLASS I.

DIVISION I.

<i>Cerebral Diseases in Insensibility:</i>	From Otitis, &c.
<i>Countenance lethargic.</i>	" Tumours.
	" Arachnitis.
From Apoplexy.	" Injuries of the head.
„ Ramollissement.	-

CLASS I.—continued.

DIVISION II.

*Cerebral Asphyxia in Stupor ;
Countenance livid.*

From Narcotic poisons.

- „ Coma.
- „ Hepatic disorders.
- „ Renal degeneration.
- „ Intoxication.
- „ Syncope (hemorrhagic).
- „ Facial paralysis.

DIVISION III.

*Cerebral Sympathies in Irrationa-
lity ; Countenance distressed.*

From Delirium Tremens.

- „ „ in Fever.
- „ „ Pneumonia.
- „ „ Pericarditis.
- „ „ Enteritis.
- „ „ Hysteria.
- „ „ Chorea.
- „ „ Mania.
- „ „ Epilepsy.
- „ Paralysis agitans.
- „ „ è veneno.

“ CLASS II.

DIVISION I.

*Thoracic Derangement ; Counte-
nance dusky.*

From Pneumonia.

- „ Pleuro-pneumonia.
- „ Edema pulmonum.
- „ Emphysema pulmonum.
- „ Edema Pleuræ (hydrotho-
rax).
- „ Asthma.
- „ Bronchitis.
- „ Endo- and-Exo-carditis.

DIVISION II.

*Thoracic Derangement ; Counte-
nance anxious.*

From Laryngitis.

From Tracheitis.

- „ Pleuritis.
- „ Empyema.
- „ Spasm of the diaphragm.
- „ Pleurodynia.

DIVISION III.

*Thoracic Derangement ; Counte-
nance of peculiar Hues.*

From Cardiac disease (chronic).

- „ Hydrops pericardii.
- „ Emphysema pulmonum.
- „ Edema (engorgement).
- „ Edema pleuræ (hydro-
thorax).
- „ Bronchitis.
- „ Hepato-cardiac dropsy.

“ CLASS III.

DIVISION I.

*Emaciation of Frame ; Counte-
nance of peculiar Hues.*

From Malignant disease.

- „ Tubercular ditto.
- „ Cancer
- „ „ of the Stomach.
- „ „ „ Uterus.
- „ „ „ Rectum.
- „ „ „ Mamma.

DIVISION II.

*Emaciation of Frame ; Counte-
nance of peculiar Hues.*

From Dropsy.

- „ Renal disease.
- „ Hemorrhage ushering in
the above disease.
- „ Mesenteric disease.
- „ Entozoa.

"CLASS IV.

DIVISION I.		From Gastralgia.
<i>Abdominal Seizures ; Countenance pinched.</i>		" Cholera.
		" Constipation.
From Colic.		" Intus-susception.
" Colica pictonum.		" Hernia.
" Gall-stones.		" Ascarides.
" Urinary do.		" Peritonitis.
" Spasm of gall-bladder.		" " nervous.
		" " acute.

"CLASS V.

DIVISION I.		From Dropsy, peritoneal.
<i>Enlargement of Organs, Glands, &c. ; Countenance, according to acute or chronic Stage, harassed.</i>		" " ovarian.
		" " mesenteric.
		" " hepatic.
		" " cardiac.
From Goitre.		" " splenic.
" Tonsillitis.		" Tympanitis.
" Cynanche parotidea.		" Tumours.
" Glossitis.		" " ovarian.
" Scrofula.		" " uterine.
" Empyema.		" " cystic.
		" " hepatic.
		" " splenic.
		" " aneurismal.
		" Acute rheumatism.
From Dropsy.		" " synovial.
" " general.		" " fibrous.

"CLASS VI.

DIVISION I.		From Phlebitis.
<i>Vascular Diseases in Excitement ; Countenance flushed.</i>		" Rubeoloid fever.
DIVISION II.		
<i>Vascular Diseases in Atony ; Countenance languid.</i>		
From Erysipelas.		From Purpura.
" Rubeola.		" Scurvy.
" Scarlatina.		" Erythema nodosum, &c."
" " notha.		
" Herpes-zostera.		
" Urticaria.		

From the foregoing classification we gather that there are the following peculiar expressions of the countenance in various diseases: the lethargic, livid, distressed, dusky, anxious, countenance of peculiar hues, pinched, harassed, careworn, flushed, and languid. And these peculiarities of the countenance are made to form the basis for a classification of disease ! On looking

over the individual affections which constitute the several groups, we find facial paralysis classed with coma, hepatic disorders, renal degeneration, intoxication, &c., and all these are placed under the second division, *Cerebral asphyxia in stupor; countenance livid*. For the sake of placing all these several diseases under one division, that of a *livid countenance*, a complete disturbance has been attempted in the other received nosological arrangements. Facial paralysis is not always necessarily connected with *cerebral asphyxia in stupor*, nor is it necessarily attended with a *livid countenance*. This affection may be of a purely local character, it may commence in the branches of the portio dura, and so produce paralysis of the muscles either of one or both sides of the face. Again, pneumonia is placed under the third division of the first class, and under the first division of the second class; bronchitis is placed under the first division of the second class, and also under the third division of the same class. "Tubercular disease" is set down under the same division with "cancer" and "malignant disease." Entozoa and dropsy are placed under the same division. Cholera, gall-stones, and urinary calculi, are associated together. Many similar instances of incongruous grouping will strike the attention of the reader whilst he runs his eye over the classification we have copied from Dr. Corfe's work. We are astonished beyond measure that the disease which of all others exhibits the most striking, the most characteristic physiognomical features, should have been totally omitted in the author's classification, namely, tetanus: we know of no affection which would have so well suited the author's purpose as this, and yet strange it is that no mention whatever has been made of it in the classification with which Mr. Corfe has furnished us.

The following quotation will assist in conveying an idea as to the manner in which the author treats of the several diseases that furnish his physiognomical classification.

"ARACHNITIS.—The great difficulty which the most eminent surgeons encounter in the formation of a just diagnosis in injuries of the head, and the obscurity attending those fatal symptoms which ordinarily follow such lesions, are chiefly witnessed in large hospitals. The above disease is rarely met with, as an idiopathic affection, in these institutions, and I shall, therefore, seize the present opportunity of tracing a marked instance of traumatic arachnitis, which ended fatally two days ago, and the *post mortem* examination of which took place yesterday. The case was the following: James Meaders, aged 51, admitted May 8th, under Mr. Shaw, with a slight wound over the left eye-brow, with the frontal bone denuded, and fractured

radius, near its humeral extremity, of the right arm. Two days after his admission he had a sharp attack of erysipelas, extending over the head, face, and neck, which, however, passed away, and he was apparently convalescent from it in ten days. On the expiration of a fortnight from this period, Mr. Shaw observed that he was slightly deaf in the right ear; that there was, moreover, partial hemiplegia on the same side, and that the two halves of the face did not quite correspond in symmetry. As the erysipelas had chiefly occupied the right side of the head and face, it was supposed that this slight distortion did not arise solely from cerebral disease. However, the house surgeon, Mr. Dixon, hastily summoned me to see him on the 8th of June, in consequence of a severe fit in which he was then struggling. The face, owing to the former erysipelatous inflammation, was blackened with turgidity, and presented the aspect of a man who had been strangled or drowned. The countenance was a ghastly figure, both in appearance and in its features. There were hemiplegic twitchings and convulsive throes of the right half of the body. There had been increased deafness and impeded deglutition for two or three days prior to this fit. The tongue was not protruded with ease, and he could not, or would not, answer to our questions so readily or so easily as he had done. These symptoms led me to suppose that either the cerebellum or pons Varolii, or medulla oblongata, was suffering from some injury which it had received in the *contrecoup* to the blow on the forehead. Mr. Shaw did not take this view of the case, but regarded the symptoms as the result of active inflammation, beneath the dura mater, of the wound, and that the impaired functions, as it seemed, of the seventh and ninth pair of nerves, were the effect of the erysipelatous swelling. The immobility of these muscles, he conjectured, resulted from the œdematous stiffening which cellular inflammation had left in its train. The accuracy of this shrewd and, to my mind, doubtful diagnosis, was fully borne out by the *post mortem* examination. The jugular was now opened, but only a few ounces of dark blood flowed; the temporal artery, and a vein in the left arm, were successively tried, but not more than seven ounces of blood could be obtained altogether. The pulse rose to 120, but diminished in power; the respirations became deeper and less oppressed, and the ghastly appearance of the countenance gradually subsided. A turpentine enema was administered, and as he already had taken repeated doses of calomel every four hours, it was deemed unnecessary to alter this part of the treatment. On the following day he was much rallied, but the improvement was of short duration, for, in the course of the same afternoon, he had another and more severe fit, and sunk in a few hours afterwards.

“*Post Mortem Examination eighteen Hours after Death.—Head.*—

The frontal bone was slightly blackened; purulent matter oozed out from beneath the scalp around the wound. The calvarium being removed, a gush of lymph and whey-like serum escaped from beneath the dura mater on the *right* side. The whole of this hemisphere was

coated with a thick layer of coagulable lymph, and the portion of dura mater immediately opposite to the wound was studded with spots of purulent matter, and the lymph on the cerebral surface at this point was unusually thick and firm. The substance of the brain was softened also in the anterior lobe of this hemisphere. The arachnoid and the whole cerebral matter on the left side were perfectly healthy. There was no effusion or disease in the pons Varolii or medulla oblongata, only that the lymph on the right side extended as far as the base of the brain.

"The following fatal case of idiopathic arachnitis, which has recently occurred, also may tend to illustrate the difficulties which surround this class of cerebral diseases. The symptoms, it will be observed, were quite of an opposite nature to the last-cited case, and yet the diagnosis was found to be a correct one by the *post mortem examination*. I attribute this circumstance, in a great measure, to the fact that, in all acute diseases springing up in an idiopathic form, especially where those diseases attack organs that are essential to life, the recognition of a malady, both in its rise and progress, can be made through the study of the physiognomy, although the patient may be quite insensible, or at least unable to furnish us with any information about his sufferings."—p. 19.

We feel compelled to withhold our assent from the general statement contained in the last sentence: it is true to a certain extent that the countenance in many diseases gives evidence of the fatal progress of the case, or indicates to the medical attendant the pleasing fact that a decided improvement in the patient's symptoms has taken place. Every observing practitioner must be familiar with those changes in the expression of the countenance, which are so apparent during the progress of a case of common typhus fever. Here, as in many other cases, every one knows the importance and value to be attached to physiognomical expressions; but that, "in all acute diseases springing up in an idiopathic form, the recognition of a malady can be made through the study of the physiognomy," appears too absurd a proposition to admit of sober confutation. We cannot overlook the fact that the opinion of the author may not be unattended with consequences of a peculiarly dangerous tendency. Amongst medical students, or young medical men just entering upon the practice of their profession, we believe the teaching of such a doctrine might have the effect of diverting their minds from the more valuable and certain means of forming a correct diagnosis, and directing them to an illusive phantom, a mere amusing conceit, which, at that most critical moment, when a clear apprehension by the practitioner of the precise nature of the patient's malady makes all the difference betwixt life and death, may lead him wofully astray, and perhaps destroy his patient's life and his own reputation.

In speaking of "narcotic poisons," and of the treatment of patients who may have taken an over-dose of laudanum, the author observes:

"Now it is commonly stated, by toxicological authors, when treating upon the subject of poison by laudanum, that after the stomach has been washed out by the pump, coffee or green tea should be administered. This practice is really quite useless,—nay, I believe it is very often prejudicial. The stomach is only irritated by it, and neither beverage has the effect of keeping the nervous system in a state of insomnia. There is, however, benefit to be derived from constant, persevering, but moderate exercise in the open air; though the patient at the outset may be scarcely able to drag one leg after the other; yet have I seen such an individual led out into the hospital garden, supported by two strong men, and *what with an occasional bastinado over the buttocks, in the form of a long, flat, and thin splint*, pulling the hair, dashing the face with cold water, and then smartly rubbing it dry with a rough towel, and again goading the patient on to walk,—I say, I have witnessed recovery from the very worst forms of narcotism by laudanum under such rough and apparently *unfeeling treatment*, whilst tea, coffee, and such like fluids, have been rejected as fast as they were swallowed."—p. 21.

We do not coincide with Dr. Corfe in his objection to tea and coffee on the ground of these fluids producing *irritation* of the stomach; we think the fact affords an argument rather *for* than *against* their exhibition. We do not object to some of the other *irritating* methods employed by the author; but we were of opinion that the *bastinado* was a form of punishment applied more particularly to the soles of the feet, and not to the buttocks, as the author recommends; if, however, he possesses a peculiar predilection for the latter quarters, we have no serious objections: it is all a matter of taste. We hope, however, for the sake of decency, and the honour of our profession, that due care was taken that none but strictly medical eyes should be permitted to witness this interesting procession through the hospital garden. It appears, after all, that additional hands are considered necessary for the purpose of propulsion; the author continues:

"If a third person does not follow in the rear, whilst the patient is walking, *and lay on pretty smartly over his glutei*, from time to time, as he flags and drags along, he will not be kept sufficiently roused to walk at all; and, when once he gets off his legs, you have an extraordinary difficulty to get him up fairly in walking order again."—p. 22.

It might be interesting to witness the *physiognomical alter-*
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ations which, in all probability, take place in the patient's countenance during this "apparently unfeeling treatment."

In the second division of the third class the author treats of renal disease; it is placed in the division and class characterized by "*emaciation of frame, and countenance of peculiar hues.*" The author takes occasion to introduce here his views relative to the minute structure of the kidney, which he states were originally published by him in a work, under the title of "*A Popular Treatise on the Kidney, &c.*," in the year 1839. He asserts that he has demonstrated the existence of fat, or oil, in the interior of the kidney, and affirms, that this material may be found contained in a series of tubes, called by him "*feathery oil-tubes;*" he asserts also, "that these oil-tubes coalesce with, and drain their contents into, the urinary ducts." And by this he endeavours to establish his claim to priority of discovery as regards the true pathology of Bright's disease!

We will not trespass longer on our readers' time; the extracts we have quoted convey, we think, a tolerably correct idea as to the nature of the work, and the object which the writer professes to have in view. We look upon the volume as a curiosity in medical literature, and as such some of our readers may wish to peruse its contents, but we cannot recommend it on any other account.

Traité d'Anatomie Pathologique Générale. Par J. CRUVEILHIER, Professeur d'Anatomie Pathologique à la Faculté de Médecine de Paris. Tome Premier. Paris, J. B. Baillière. 1849. 8vo. pp. 743.

IN the high rank of importance bestowed on pathological research, will, perhaps, be found the most marked characteristic of medical science in the present day; and to the labourers in this department we undoubtedly owe much of the progress, and many of the most important additions made to medical knowledge within the first half of the present century.

From humble beginnings, and the unpretending labours of the scalpel, pathology has gradually developed itself; at one time receiving support and elucidation from the collateral departments of medical science; at another, shedding new light on obscure questions of physiology, or laying the foundation of the more practically useful, and not less interesting, science of diagnosis; and thus ever adding to and extending the sphere

of its operations, it has now become the centre to which the highest investigations of the physiologist, the chemist, and the microscopist, tend, embracing all, connecting all, elucidating all: and when we consider the relation existing between pathological principles and questions of hygiene, we cannot, we think, doubt of the propriety of assigning to pathological investigation a position of paramount importance. Usually regarded as a special department, we find that pathology is itself capable of subdivision, and that it admits of, and has been subjected to, several methods of investigation, to such a degree, indeed, that distinct and separate *specialisms* have been created, and that, amongst several observers, physiological, chemical, and microscopical pathology, have each had their particular supporters. As might have been anticipated from this division of labour, the amount of important observations has been greatly multiplied, while the appreciation of the general bearing and connexion of all is confined to a few, who combine in themselves the several principles of research, and are familiar with their application. To the French and German schools belongs the honour of having first appreciated the importance of pathology, and to them, too, are we indebted for the most complete and successful investigations; they it was who marked successive epochs in the history of pathological research, by giving to it new impulses when periods of inaction and stagnation ensued on the completion of a series of researches, or the apparent exhaustion of each method of discovery. The English and Irish schools, if not always originaive, have ever followed honourably and successfully in the path of scientific research, and in many instances disputed the palm in a noble spirit of emulation with their foreign antagonists. Pathology has had its cultivators both in Ireland and England, though their labours have not been so extensive, nor their attention so well directed to several of the most important of its subdivisions as on the Continent. In relation to the Irish school of medicine, in which we profess ourselves both more interested and better informed, the foundation of the Dublin Pathological Society marked an era, and gave promise, which, we are proud to say, has not been disappointed, of important results. With the success which has attended the labours of this Society, and the additions it has made to our knowledge on many subjects, we presume every well-informed Irish physician is acquainted; while the testimony borne to their value in the writings which have emanated from the English, French, and German schools, amply proves that the labours of Irish pathologists have

been duly appreciated(a). In every department of pathology, save one, we can point to Irish names; for while the proceedings of the Pathological Society and the pages of our Journal record multiplied clinical observations, their connexion with special lesions, and the characters of these lesions as displayed by the scalpel, and numerous physiological and chemico-pathological investigations successfully undertaken, the microscope, one of the most valuable means we possess for the investigation of diseased structures, has been wholly neglected; we cannot therefore point to a single observation of the microscopical characters of normal or abnormal structure emanating from the Irish school of medicine. We believe that we have discovered the causes which have led to our backwardness in this interesting branch of science; but as they are local, and we hope, but temporary, their exposition would hardly be in place at present. Suffice it to say, that we anticipate a new impulse to medical observation in Ireland, and hope ere long that the department of microscopical research will number amongst Irishmen many devoted followers, and that this, as well as other branches of science, will find its representatives and cultivators amongst us. We refer with pleasure to the recent appointment of a microscopical committee in the Dublin Pathological Society, a fact which sufficiently indicates that we are fully sensible of our deficiencies in this department, and determined to supply them. And now that we anticipate a new impulse to pathological research in Ireland, we may be allowed a few remarks, dictated by an anxious desire to guide and direct into the only true path of investigation those who may be destined to enter the arena. The labours of Irish pathologists have been hitherto, with a few exceptions, desultory, and have resulted more from accidental circumstances than from the pursuit of special systems of observation. We have not had specially educated pathologists, and consequently we have not had special systems or treatises on pathology, nor, indeed, on any of its subdivisions; and in the Irish school of medicine there does not exist a single chair or lectureship of pathology. This, the most unworked portion of the entire field of medical science, has yet found no special labourers here; and yet, from the overcrowded departments of medicine and surgery many a student might be spared, whose energies, directed to a sphere of less closely contested action, would bring him a rich

(a) Pathological Societies are now also in full operation in two of our principal provincial cities, Cork and Belfast; the proceedings of both of which we purpose publishing from time to time in our Journal.

reward of early honours, and make some additions to this neglected department of Irish science(*a*). Great progress in pathological investigation we cannot otherwise anticipate, and surely the example of a Vogel and a Cruveilhier cannot be without influence; who, if their labours have been untiring, their life a devotion, have undoubtedly met, in the possession of a world-wide fame, a commensurate reward.

To the indefatigable zeal and industry of Cruveilhier, medical literature is indebted for the celebrated *Anatomie Pathologique du Corps Humain*, which has so long been the text book, and standard of reference to the pathologist, and whose accurate delineations of disease have but received additional confirmation from all subsequent observations. This great work, comprising the details of special forms of disease, as manifested in the several organs, is now appropriately succeeded by the *Traité d'Anatomie Pathologique Générale*, which embraces the more general consideration of pathological principles, the classification and arrangement of all the observations hitherto made, and the deduction of laws from them, as far as is warranted by a just system of generalization. With a true appreciation of the extensive nature of the subject, pathology is thus defined in the "Considérations Générales" which form the introductory chapter:

"Considered in the most general point of view, pathological anatomy is that branch of medical science which has for its object the study and determination of all the material lesions of which organized beings are susceptible. Pathological anatomy is the science of *morbid organization*, as physiological anatomy is the science of normal organization. And as living beings are divided into two great classes, vegetables and animals, we have a pathological anatomy of vegetables and a pathological anatomy of animals; the latter being divided into special pathological anatomy, whose object is the study of one single animal species; and zoological or comparative pathological anatomy, whose object is the comparative study of the same lesions of the same organs in the different species of animals."

In this comprehensive definition we observe with pleasure the importance attached to zoological pathology; but, indeed, in France it has long occupied a recognised position, and has been cultivated with distinguished success. Attention has been

(*a*) The dedication of the *Traité d'Anatomie Pathologique* shows a noble example of individual munificence, it runs thus:

"A la Mémoire de G. Dupuytren, dont la munificence, par un legs généreux, a doté la Faculté de Médecine de Paris d'une chaire d'anatomie pathologique; dont la bienveillance m'a désigné l'occuper.

"CRUVEILHIER."

elsewhere^(a) publicly drawn to the lamentably deficient condition of our knowledge on this subject in Ireland.

The object which our author proposes to himself in the present work he states to be the pathological anatomy of man, which he considers may be studied under three different points of view, which thus give rise to three distinct species of pathological anatomy, viz.: 1st, General Pathological Anatomy; 2nd, Applied Pathological Anatomy; 3rd, Topographical Pathological Anatomy."

1st. General pathological anatomy studies in an abstract and general manner, and from a scientific point of view, morbid lesions, independently of the maladies to which these lesions belong. Its particular end is the determination and classification of morbid anatomical species.

2nd. Applied pathological anatomy, has for its object the study of morbid species in connexion with the maladies, properly so called, i. e., with their symptoms, their causes, their progress, their terminations, and their treatment; while

3rd. Topographical pathological anatomy has for its object the complete delineation of morbid lesions as they are manifested in each of the regions of the human body, independently of the affinities or the discordances which may exist between them."

He then proceeds to show the connexion of pathological anatomy with the other branches of medical science, with physiological anatomy, with surgery, with medicine, and its general importance; the information which it furnishes us with, as regards the seat of disease, and the organic nature of all lesions, with their diagnosis and treatment, their causes, effects, and prognosis. The consideration of the morbid anatomical species is next entered on, and he thus defines them:

"By *morbid anatomical species*, we understand those groups of lesions which resemble each other in their fundamental characters, and which differ only in secondary characters."

Of the existence of these morbid species we cannot doubt, and the regularity of their occurrence, and the constancy of their characters, the author thinks are not due to the action of a blind cause, but to certain laws, as regular and as sensible of appreciation as those which preside over physiological phenomena. These laws he has thrown into the form of a certain number of propositions:

"I. The number of morbid species is limited.

"II. Morbid species are identical, whatever be their seat.

(a) Irish Quarterly Journal of Agriculture, November, 1849.

"III. General lesions, or such as are common to all the tissues, are the rule, and special lesions the exception."

This law, as the author himself remarks, differs fundamentally from the principles of Bichat, who considered every tissue to have its proper lesions, excepting only in the instances of cancer and inflammation, which he considered as common to all. We feel convinced ourselves that the truth lies between these two statements; for, while the opinion of Bichat is untenable as a general rule, it is certain that, in many instances, characteristic phenomena can be observed in the lesions of the different tissues.

"IV. Each tissue, each organ, has its morbid affinities."

This law has undoubtedly practical application, and, if combined with a judicious use of the statistical method, must lead to important improvement in diagnosis.

"V. There exists a certain number of special lesions.

"VI. Anatomical characters should form the basis of the determination of morbid species.

"VII. Anatomical characters are to be sought in the external conformation, and in the textures of diseased organs.

"VIII. The study of the development of morbid lesions is necessary for the determination of species.

"IX. Experimental pathological anatomy is one of the most fruitful bases of pathological anatomy, and consequently of pathology.

"X. Compound morbid species result from the association of a certain number of lesions, and this association takes place in obedience to certain rules, which may be called the laws of morbid association.

"XI. The morbid species are not capable of transformation, the one into the other."

This law, which we must now consider as established for all the phenomena of a pathological epigenesis, is one of considerable practical importance as bearing on questions of prognosis, and lends additional value to the science of diagnosis; it must not be looked upon as contradicting the observations made on the changes effected in exudation plasma,—extra-vascular blood, and, as our author himself remarks, does not apply to the passage of areolar tissue into fibrous, fibrous into cartilaginous, or cartilaginous into osseous, which he considers as but different stages of development of the same tissues. That hypertrophied or atrophied tissues may become cancerous is not denied, for these hypertrophies or atrophies are not morbid species.

“XII. The existence of a morbid lesion confers immunity against other *species* of lesions.”

In this law, which has a certain generality of application, prognosis receives valuable assistance, but it has not such extension as we might suppose at first. Thus, while the cancerous transformation of the fibrous tumours of the uterus is, as follows from the preceding law, a pathological impossibility, the association of cancerous deposit in the intermediate structures of this organ may be found in obedience to the laws of morbid association.—(Law X.)

“XIII. The living tissues are unalterable by themselves.”

This proposition receives important support from the chemico-microscopical investigation of diseased products, and we anticipate that, ere long, the doctrines of heterologous deposit will supplant those of transformation of tissue. It requires extensive observation yet to show that this law is of general application to all the morbid species.

“XIV. The immediate seat of all morbid nutrition and secretion is in the capillary system.”

The important subject of the classification of morbid species follows the enunciation of these important propositions, which we cannot but think must be considered as the fundamental laws of a rational system of pathology. While we must ever feel disposed to look with distrust on systems of classification proposed in the infancy of science, we are not of the opinion of those who consider the amassing of facts as the only duty of the scientific inquirer; and however imperative the necessity of generalizing, after the Baconian method, by induction, in the advanced stages of knowledge, we cannot but think that a certain amount of imagination and hypothesis is essential to the successful pursuit of philosophical investigations, to direct the mind to the consideration of analogous facts, and the collection of observations which tend to the elucidation of a common object(*a*).

The present classification of morbid species, adopted by Cruveilhier, differs very widely from that originally proposed by him, and certainly meets much more fully the requirements of pathological science, as it exists in the present day. It is also much more comprehensive than the system of Vogel. It takes for its basis the material lesions, and though many

(*a*) The Introduction to the *Cours de Philosophie Positive*, par Auguste Comte, contains an able exposition of this doctrine.

phenomena, which we find constantly associated in practice, are thus widely separated, and treated of in distinct groups, perhaps, on the whole, as little inconvenience is thus experienced, as by any other system. It comprehends in all ten groups and seventeen classes:

"First Group.—Lesions of continuity, which presents two classes: 1st, solutions of continuity; 2nd, adhesions.

"Second Group.—Lesions of continuity presenting four classes: 3rd, luxations; 4th, invaginations; 5th, hernias; 6th, deviations.

"Third Group.—Lesions of canalization, presenting three classes: 7th, foreign bodies; 8th, obliterations and contractions; 9th, dilatations.

"Fourth Group.—Lesions of nutrition, two classes: 10th, hypertrophies and atrophies; 11th, metamorphoses and analogous organic products.

"Fifth Group, forming the 12th class: dropsies and fluxes.

"Sixth Group, forming the 13th class: hemorrhages.

"Seventh Group, the 14th class: gangrenes.

"Eighth Group, the 15th class: *lesions phlegmasiques*, comprehending all that characterize the history of inflammation.

"Ninth Group, the 16th class: strumous lesions.

"Tenth Group, the 17th class: carcinomatous lesions."

In this order he proposes to study the phenomena of general pathological anatomy, and the remainder of the first volume is devoted to the consideration of the first two groups, comprehending the first six classes.

The solutions of continuity, a class of the highest importance, not only in surgery, but also in practical medicine and pathology, when taken in their most general extension, he further divides into three sub-classes.

"1st, solutions of continuity, which are traumatic, or the results of wounds:

"2nd, solutions of continuity non-traumatic, or from internal cause:

"3rd, solutions of continuity which are congenital.

The first of these sub-classes is further divided into solutions of continuity, "1st, by wound; 2nd, by contusion; 3rd, by *escarification*; 4th, by rupture; 5th, by fracture."

Each of these subdivisions is treated of with the fullest detail, a most able *resumé* of all our knowledge on them being generally presented. In the section devoted to wounds will be found much of interest to the medico-legal inquirer, while the subdivision on fractures is of particular value. The pathological anatomy of fractures comprehends, first, the pri-

mitive or immediate phenomena; secondly, the consecutive phenomena.

The solutions of continuity of the patella and os calcis by muscular action are,—we think without sufficient reason,—excluded from the class of fracture, and referred to that of ruptures. They would seem in a manner to belong to both these groups. In the consideration of the primitive or immediate phenomena, we have, first, the state of the bone, and, secondly, the state of the soft parts, treated of.

The fracture usually termed longitudinal is regarded by Cruveilhier rather as a splitting (*éclat*) of the bone, similar to the starring produced in the flat bones; and double fractures he regards as *invariably* requiring for their production the simultaneous or successive action of two causes, on two places in the length of a bone.

Under the head of *displacement*, the position of the fragments, the active and passive causes of alterations in position, and the state of the soft parts, are described.

The separation (*décollement*) of the epiphysis is classed with “fractures,” instead of with “ruptures,” in consequence of its resulting generally from the action of external violence in a manner exactly identical to that by which fractures are produced. An important distinction is laid down between separations of the epiphysis which are traumatic, and those which, succeeding to disease, must be classed with consecutive fractures, or those from internal cause. With regard to the separation of the epiphysis during intra-uterine life, Cruveilhier is of opinion that all the cases of this kind recorded must be referred to the effects of putrefaction, as it would seem that in all the instances in which this lesion was observed the foetus was still-born, and no observation has been recorded as to the absence or presence of putrefaction.

The observations of M. Rognetta on separation of the epiphysis during labour, by the traction exercised on the limbs, are considered by Cruveilhier as establishing the possibility of producing the lesion in this manner; while from the results of the experiments of M. Géuretin, and MM. Jarjanay and Bonamy, it would appear that no amount of mechanical violence could succeed in producing separation of the epiphyses.

Under the class “ruptures,” the various solutions of continuity in tendons, ligaments, muscles, arteries, veins, nerves, bones, &c., which result from tension or distention of organs beyond their natural extensibility, are placed.

In the “ruptures of the hollow viscera,” attention is drawn

to the rarity of rupture of the human stomach independently of organic lesions, and the remarkable frequency of this accident in the ruminantia, from the accumulation of gas, constituting the disease known to veterinary surgeons by the name of *hoove*.

The class "escarifications" is divided into, first, escarifications, the result of contusing bodies impelled with great velocity (wounds by fire-arms); second, escarifications by strangulation, viz., hernia and paraphymosis; third, those which result from the accumulation or subtraction of caloric; fourth, those by cautery.

The question of the "causes of death in solution of continuity," whether the result of wound or surgical operation, is next considered, and at great length.

"These causes of death are capable of being divided generally into, 1st, causes of death by primitive accidents; 2nd, causes of death by consecutive accidents.

"The causes of death by primitive accidents are: 1st, the lesion of an organ indispensable to life, or a great mutilation; 2nd, stupor; 3rd, convulsions—*eclampsiques* (*epileptiformes*); 4th, hemorrhage; 5th, introduction of air into the veins."

In the details of the fifth subdivision we find a *resumé* of all the knowledge accumulated on the important subject of death by the introduction of air into the veins.

Bichat was of opinion that the introduction of any quantity of air into the veins caused death by the brain, and consecutively by the heart. The experiments of Dupuytren go to prove that, although the sudden injection of a certain quantity of air caused instantaneous death, the slow and gradual injection of nearly an equivalent quantity was not incompatible with the continuance of life. For the introduction of air into the veins a certain force acting from within appears to be necessary; this force we find in the inspiratory effort, but it would also appear that certain conditions of the orifice, in the wounded vessel are to be looked for.

"1st, The wounded vein must be sufficiently near the centre of the circulation, in order that the force of inspiration may be capable of acting on it; 2nd, the walls of the vessel must be maintained separated, and a patulous opening be presented. Thus, in most of the operations which have been followed by penetration of air into the venous system, mention is made of veins adhering to the surface of tumours on which traction had been made, so that the walls of the veins and the lip of the orifice must have been maintained separated and patulous."

A remarkable sound has in all cases accompanied the entrance of the air. An examination of the body in cases of death has generally shown:

“A distention of the right auricle alone, or of the auricle and ventricle of the right side, all the veins containing air, bubbles of which are observed through the columns of blood, a considerable quantity of air in the pulmonary artery and its divisions, and, according to several observers, air in the aorta and its branches. From these facts, it follows that death takes place by the heart, the lungs, and perhaps the brain. The rarefaction of the air, a theory brought forward to explain the cause of death, is untenable, for it is proved that in passing from the temperature of melting ice to that of boiling water, atmospheric air augments only three-eighths its volume. Nysten has obtained some curious results from the injection of other gases into the veins, and has established the fact that their chemical agency has considerable influence on the contractions of the heart.”

The consideration of the causes of death by “consecutive accidents” is next taken up. To the pathology of tetanus the labours of all inquirers have added but little, and from his own examination of the nervous centres, and their enveloping membranes, Cruveilhier has arrived at no positive results. In regard to its physiological pathology, the following observations of this distinguished writer deserve consideration:

“As physiological pathology has taught us that death takes place in tetanus, when the spasm attacks the muscles which preside over respiration, deglutition, and phonation, one is tempted to inquire whether it would not be possible to substitute for the convulsive contraction, a voluntary, permanent, and energetic action of these muscles. Such was the thought which directed me in the following case.

He then proceeds to detail a case in which a young and vigorous peasant labouring under tetanus, the result of the forcible separation of the thumb from the hand, was cured by the application of this principle.

“The patient was young, and full of life and courage, and I ventured to assure him of being cured if he submitted to my orders. I placed myself before him, and instructed him to respire in a measured time, making as deep inspirations as possible. To direct him in this fatiguing exercise, I beat before him the measure *à deux temps*. During an hour there was no attack of suffocation or strangulation. My place was taken by assistants, who relieved each other, and at the end of four hours, the patient fell into a profound sleep. On his waking, the same system was recommenced, which was again followed by sleep. After the suspension of this treatment, there

were slight exacerbations, but they speedily gave way, and he was completely cured."

In another case this practice was found inapplicable, owing to the want of docility on the part of the patient, who was subsequently cured by the use of baths and cold affusion.

The following passage presents a brief *resumé* of all our knowledge of this singular affection, than which no other more forcibly points out the imperfection of our art.

"Let us never forget that pathological anatomy has established the absence of all lesion in tetanus; that those affected die of asphyxia; that this asphyxia is produced by the convulsive action of the muscles of respiration and deglutition; and that consequently tetanus is not incurable from its nature, and that the therapeutic problem to be resolved is the controlling of the spasms of these muscles."

Amongst the most remarkable of the causes of death by "*general consecutive accidents*," are traumatic fever, visceral inflammation, and phlebitis, which are severally treated of at length. In considering the question of visceral abscesses, the following passage occurs:

"These abscesses are the result of a capillary phlebitis in the viscera, a secondary phlebitis succeeding to a primitive phlebitis, which may affect equally the capillary system of veins as those of middle and large calibre."

The non-traumatic solutions of continuity, or those which may be considered consecutive, form the subject of the second sub-class, in which those which result from inflammation, spontaneous softening, and gangrene, are described; while the third sub-class comprehends the congenital solutions of continuity. In this section we find a very excellent classification of all the anomalies of organization. Passing over the greater number of these lesions, our attention is arrested by the section on congenital fractures, separation of the epiphyses, and section of limbs. The evidence hitherto adduced in favour of the occurrence of fracture during intra-uterine life, Cruveilhier thinks not at all conclusive. The agency of external violence has been adduced to explain the occurrence of these accidents, such as falls sustained by the mother, blows, &c. The majority of these cases may be with more justice referred to the causes operating during labour; for example, extraction by instruments with regard to the separation of the epiphyses,—this, as we have before remarked, he is disposed invariably to consider as the result of putrefaction. In treating of the section of limbs, the author

alludes to the observations made in the Irish school of medicine on this subject, to which our continental friends have added little not before known to us.

The consideration of "adhesions" forms the subject of the second class of the first group of morbid species or lesions of continuity.

This class is subdivided into—"1st order, restorative adhesions; 2nd order, morbid adhesions; 3rd order, congenital adhesions."

The first order, which constitutes the adhesive inflammation of other authors, presents many subdivisions, and we find the subject of "*engrafting*" and the reunion of parts completely severed from their continuity with the body, largely treated of.

The adhesions of solutions of continuity in bones, or fractures, are next considered, and the history of *callus*, from Duhamel to Cruveilhier, fully entered into. The opinions of this latter distinguished pathologist are presented in the following propositions:

"It follows from what precedes, 1st, that the consolidation of bones takes place not only at the expense of the periosteum, but also at the expense of all the lacerated parts which surround a fracture; but that the periosteum *can* suffice for the formation of the callus, when there is no displacement. 2nd, That the blood goes for nothing in the consolidation of fractures; that it is an obstacle, and not a means of union. 3rd, That there is in every case of fracture a secretion of plastic ossifiable lymph, which is infiltrated into all the soft lacerated parts which surround the fragments, and which forms the true means of union. 4th. That the fragments of a fracture in no way contribute to their own union; that they are inert, similar to what results from the section of the branch of a tree; that at no period of the consolidation do we find any work (*travail*) in the fragments, and that in this the bones behave themselves as the soft parts. 5th. That there do not exist two species of callus, a provisional and a definitive callus, in the sense that the definitive callus is the result of a process proper to the end of the fragments, which succeeds to a provisional callus having its seat in the periosteum. There is but one and the same callus, spongy in the first period of its formation, which answers to that which is called provisional callus; compact in the second period, corresponding to what is called definitive callus. The callus is truly a new bone, which runs through the same stages as normal ossification, and is nowise an osseous concretion."

Passing to the third order or "Congenital Adhesions," we find them subdivided into "adhesions between the parts of the same foetus, and adhesions between two foetuses." Under the former we find classed all the imperforate conditions of

natural orifices, adhesions of the symmetrical organs, &c.; under the latter, the different monstrosities which we term double, and for which a nomenclature is introduced, based on the parts of the body by which the two fœtuses are united, viz., cephalodymie, somodomie, &c.

A subdivision treats of double *parasitic* monsters, in which one fully developed appears as it were to carry implanted on it another atrophied and which seems to draw life from it. On the question of inclusion, the theory which appears most satisfactory to our author is as follows:

“The penetration of a fecundated germ into another fecundated germ: the *intussusception*, to make use of the expression of Dupuytren, in the case of a double conception, so that the included fœtus is the brother and contemporary of the fœtus which includes, and is conceived by the same act of generation.”

In the third class which forms the first subdivision of the second group of lesions of continuity, the phenomena of “Displacement by luxation” are considered, and we find a subdivision into—1st, primitive or traumatic luxations; 2nd, consecutive or spontaneous luxations; 3rd, congenital luxations. It will be observed, that this great class of solutions of continuity can only be considered as theoretically perfect, for in practice it is necessary always to take into account that luxations are complicated with solutions of continuity, in the rupture of ligaments, &c., while in many instances a solution of continuity of bone accompanies the displacement. All the questions connected with the change in length, obliquity, rotation of the bone on its axis, are treated of fully. In speaking of the kinds and species of luxations, allusion is made to the imperfection of our present nomenclature, a point on which all scientific surgeons must feel the want of something like a correct and accurate classification, and some examples of the nomenclature which originated with M. Roux, and was developed by M. Gerdy, are given; thus the luxation forwards of the humerus is termed, sub-coracoid luxation, that backwards, sub-spinous, &c.

Under the head of “practical consequences of the facts of pathological anatomy relative to traumatic luxations,” are considered those relative to the symptoms of luxation, obstacles to reduction, and the treatment.

Passing over the second order, which considers the luxations consecutive on chronic articular inflammation, comprising spontaneous luxation of the occipito-atlantoid, atlo-axoid, and coxo-femoral articulations, and those from the long continuance

of vicious position (that of the first phalanx of the great toe being the type of the latter), we are brought to the third order, or congenital luxations.

In this important section we find honourable mention made of the labours and careful pathological investigations of Professor Robert W. Smith, and full details are given of all the points at issue between him and the distinguished author of the *Anatomie Pathologique*. Of the congenital dislocations of the humerus, Smith recognises two forms, the sub-coracoid and the sub-acromial. Four of the cases detailed by Smith, Cruveilhier is disposed to look upon as examples of displacement of the articulation due to the paralysis of the deltoid which was present. He states that many cases of paralysis of the upper extremities, or merely of the deltoid, which took place in early infancy, as the result of convulsions or muscular pain, have presented to him exactly similar phenomena. This point certainly is deficient in the details of Smith's cases, which varied from nine to twenty-nine years of age at the time when his observations were made, and of course the statements of patients, as to the length of time they had been subject to the injury, are without much value; however, the anatomical and other characters are so distinct, that to us it would seem that mere paralysis of the deltoid would be insufficient to account for the lesion, and Cruveilhier omits all detail of the pathological condition in his own cases. The two subsequent cases by Smith are considered by Cruveilhier as true examples of congenital luxation. A third case is added, which is described as *probably congenital*. The next form of dislocation given is the congenital luxation of the radius backwards on the humerus, of which two cases are enumerated.

In reference to the disputed case of dislocation of the wrist-joint, described in the *Anatomie Pathologique*, liv. ix., there designated a dislocation of the fore-arm backwards on the hand, presenting an example of luxation of the carpus without fracture, but which, according to Smith, must be looked on as a case of congenital malformation,—in support of which view he brings forward a case of double malformation,—our author says:

“I in nowise refuse to admit the explanation given by Mr. Smith of the fact which I have represented under the title of luxation backwards of the fore-arm on the hand, which he considers as an example of congenital luxation.”

The congenital luxation of the hip-joint, it appears, was known to Hippocrates; but the first pathological details were

published by Palletta in 1788, while the memoir of Dupuytren did not appear until 1826.

The existence of congenital luxations being established beyond denial, certain questions arise, which we find put in the following order:

“1st, Do there exist differential anatomical characters, which enable us to distinguish congenital from accidental luxations of the femur? 2nd, Are these differential characters manifest in the living subject? 3rd, Have we sufficient data to arrive at the determination of the causes of congenital luxation? 4th, Is the reduction of congenital dislocations possible?”

In the great majority of the cases observed, the dislocation has been double. The anatomical characteristics to be looked for are, “the lengthening, without rupture, of the fibrous capsule, the configuration of the cotyloid cavities, the disposition of the head of the bone;” all these grounds of diagnosis are considered at length. The second question, as to the existence of differential characters in the living subject must likewise be answered in the affirmative. The entire of this important section demands the most careful perusal, presenting as it does an admirable and most complete *resumé* of all our information on these important and interesting subjects.

The fourth class comprehends “Displacements by invagination,” of which we find five subdivisions.

“1st, invagination limited to the mucous membrane; 2nd, invagination by three cylinders.”

In this form we find the mucous and serous surfaces arranged as follows:

“1st, in the centre are two mucous surfaces, belonging to the internal cylinder; 2nd, in the middle, two serous surfaces, belonging, the one to the internal, the other to the middle cylinder; 3rd, more superficially two mucous surfaces, the one belonging to the middle cylinders, the other to the peripheral cylinder; 4th, the serous surface of the peripheral.”

The clinical characters of this species are highly important, as they offer us a means of diagnosis between this lesion when it becomes strangulated, and the more obscure forms of hernia. The phenomena on which our diagnosis must be founded are but two; these, according to Cruveilhier, are:

“1st, the presence of a tumour, more or less considerable; 2nd, the expulsion by the anus of a great quantity of sanguineous mucus, a sign which is never absent, and which I consider as pathogno-

monic. In a great number of cases there is dysenteric tenesmus. 3rd, invagination by two cylinders."

Of this form, likewise, many subdivisions are presented, based principally on the anatomical characters of the lesions. The fourth and fifth species comprehend invaginations of the uterus, the bladder, the mamma, traumatic invagination, and the congenital forms. Of the last, the inversion or rather extroversion of the bladder and the uterus, accompanied by deficiency in the abdominal walls, is the most remarkable.

The fifth class comprehends the "*Displacements by hernia*," and forms a most important section. The classification presented to us enumerates the following forms:

"1st, tunicated hernias; 2nd, aqueous hernias; 3rd, traumatic hernias; 4th, hernias by eventration; 5th, hernias by separation of the parietes of cavities (*érraillement*); 6th, hernias by the natural rings."

The first form is confined to the tunicated organs, in which, by the separation of the fibres of one coat of a viscus, such as the bladder, a protrusion of the subjacent ones takes place. The type of this form is to be found in the bladder. They have been also observed in the inferior part of the pharynx, the commencement of the œsophagus and the rectum, and the sigmoid flexure of the colon. The second class comprehends the affections termed cranial hydrocele, hydrocephalaccele, congenital hydrocele, and spina bifida. Passing over the remaining subdivisions, which contain a very complete classification of all the varieties and the enumeration of the most remarkable cases put on record, our attention is arrested at class 6, which considers

"Hernias by the natural openings of the splanchnic cavities, or ordinary hernias;—or those by the natural rings."

These present for our examination:

"1st, the changes effected in the rings; 2nd, the parts constituting hernias; 3rd, the complications and accidents of which they are susceptible; 4th, what we must understand by congenital hernias at the natural rings."

Each of these questions is treated at considerable length. Under the third head, "Complications and accidents," we find strangulation of hernias fully considered. The fibrous rings Cruveilhier believes to act only a passive part in strangulation, as the following observations are intended to show:

"The fibrous rings, as well as the neck of the hernial sac, are

completely passive in strangulation, for they are not submitted to any variation in their diameter, being neither elastic nor contractile; the parts displaced, on the contrary, are eminently variable in their volume, and it is in them the disproportion is established, whence strangulation results, and which is the more easy in proportion as the rings are more narrow and resisting."

In this statement no account is made of the opinions of Mr. Guthrie, and other British surgeons, who have described the boundaries of the internal ring as muscular, owing to the peculiar arrangements of the inferior fibres of the transversalis abdominis. In his *Treatise on Practical Anatomy*, also, M. Cruveilhier has omitted all mention of this opinion, and describes the posterior boundary of the inguinal canal as formed by the transversalis fascia^(a).

"The seat of strangulation is most usually on a level with the fibrous ring, or, what comes to the same thing, on a level with the neck of the sac."

The pathological anatomy of hernia which has been strangulated presents for consideration different conditions, referable to a first and a second period, which are treated of at length.

The section on congenital hernia is neither very full nor does it add anything to already recorded observations.

The sixth class, which forms the last of the second group, comprehends "Displacements by deviation." This section presents us with a classification of all the congenital or accidental displacements which do not enter into the categories hitherto enumerated, and which consist in a change of direction or relative situation of the hard and soft parts, viz., rachitic curvatures, splanchnic inversions, &c. With this section, the consideration of the second group, and the first volume close. As has been seen, the majority of the subjects treated of belongs to the domain of *surgical* pathology; but we have much gratification in remarking that so influential an author as Cruveilhier has practically, by the adoption of a comprehensive system of classification, done much to abolish the unscientific and arbitrary distinctions that separate medicine from surgery. In the present advanced condition of our knowledge, when facts have become so multiplied, that not only medicine and surgery are cultivated as specialisms by different observers, but when each of these departments exhibits a tendency to further subdivision and the establishment of an increased number of specialists, it must be ever borne in mind that we are all but workers in one

(a) Library of Medicine, vol. vii.; Cruveilhier's Anatomy, vol. i. p. 400, *et seq.*

common science, and that our labours, however unconnected they may appear, whether pursued in the hospital or the laboratory, directed to the microscope or to the numerous other media of investigation, have all one common end, one common tendency. By a gifted few only will the general appreciation of, and acquaintance with all departments be attainable.

To all who are interested in scientific pathology we earnestly recommend the admirable work of Cruveilhier, not as a book to be considered the repertorium of all that is now embraced by this, perhaps the most comprehensive of the departments of medical science,—for, as we have already stated, it does not pretend to deal with the labours of the pathological chemist or histologist,—but as the most complete treatise on general pathology we are acquainted with. We anxiously await the publication of the next volume.

A few Suggestions on Consumption. By ROBERT HULL, M. D., Physician to the Norfolk and Norwich Hospital. London, Churchill. 1849. 12mo. pp. 138.

Thoughts on Pulmonary Consumption, with an Appendix on the Climate of Torquay. By WILLIAM H. MADDEN, M. D., Physician to the Torbay Infirmary. London, Churchill. 1849. 12mo. pp. 219.

THOUGH we always hail with pleasure the appearance of publications emanating from the medical staff of the English or Irish provincial hospitals, we are compelled, through an imperative sense of duty, to pronounce, after mature deliberation, and careful perusal of the above works, that they do not, in any one particular, fulfil the requirements of medical publication. However small the field of observation, there is not a medical establishment, from the humble dispensary to the well-appointed county hospital, that could not be made instrumental in the advancement of professional knowledge, did a well-directed spirit of inquiry, and a little elevating enthusiasm, fall to the lot of those on whom devolve the responsibility and charge of such establishments. The patient pursuit of a single investigation, even by one endowed with the most humble and unpretending abilities, would be certain to lead to important results; and if every practitioner possessing ordinary opportunities of observation undertook a little special inquiry on any of the numerous forms of disease, we should arrive at the elucidation of many important questions of pathology, diagnosis, and treat-

ment. "Pourquoi craindre de montrer à tous les yeux les vides de la science? Au moins, l'attention de tous serait éveillée sur ces lacunes, et des travaux arriveraient en foule pour les combler(a)." Such should be the spirit of medical inquiry and of medical publication. What department is so complete that it could not be enriched?—what that could not be further elucidated, even by humble ability, if earnestly and judiciously directed?

Medical publication, then, if we do not greatly err, should contemplate a certain amount of new matter to be added to the general stock of knowledge, a certain amount of originality, the diffusion of new views on disease and its treatment; while the accumulation of testimony on points still *sub judice*, or confirmation of hitherto generally received doctrines, we are of opinion comes more particularly under the department of journalism. Believing these views to be correct, the publications of Drs. Hull and Madden must be pronounced wanting in the most valuable qualities.

To the duties of authorship Dr. Hull has brought some acquaintance with the classics, a vein of maudlin wit, but neither much power of observation nor great judgment. If erudition consists in free quotation, we shall concede to him a sufficiently extensive acquaintance, not only with the classics of antiquity, but with the classics of medicine, both modern and ancient; and though the labours of the chemico-pathological school are not alluded to with any high marks of approbation, a poetical version of some of the organic compounds is introduced which sounds trippingly enough, and no doubt displays an elegant Latinity.

"Do the finer analysis of modern chemistry subserve the practitioner treating phthisis? Can he chant to victory from an acquaintance with the protein compounds;

" 'Pepsin seu ptyalin, chondrin, glutine, pyinve.' "

But hexameters give only a faint idea of the Doctor's classical predilections; his patients, at least all those in the higher walks of life, enjoy classical names, being severally denominated Uranius, Prasinus, Victor, Narda, Altella, &c. Hero-worship still characterizes the human race, and in this quality the author of the "Suggestions" excels; he sacrifices to Sydenham, too, and in the matter of equitation, as amongst the most efficient of our curative agents, urgently impressing with the necessity of following to the letter the maxims of this great observer; but we think the transition from the sublime to the vulgar a little too sudden in the following:

(a) Cruveilhier, *Anatomie Pathologique*, liv. ix.

"We allow Sydenham to be the closest observer, the prince of English physicians, the most successful of curers, the most unimpeachable of writers; yet we heed him not, when he discusses the subject of phthisis, so fatal to our countrymen, when he promises salvation if our invalids will but ride, eat, and drink like—*bagmen*."

Exordium is discarded and we are soon carried "in medias res." We find that cod-liver oil receives a sort of doubtful and guarded expression of approbation, but,

"Porter is often the best beverage, if it can be obtained unadulterated,—the true, simple, honest liquid."

While a pretty large proportion of the articles of the *materia medica*, which are enumerated, receives a very sweeping condemnation, opiates are more especially signalized. Speaking of cough, which we all know to be such a distressing feature in many cases of phthisis, he says:

"Cough is an effect; he who would remove it should attack its cause. Cough indicates that something exists, irritating the lungs, like a foreign body, requiring expulsion. To allay with opiates is to render the lung insensible to this foreign body, but not to abolish the evils of its presence; it is masking the disorder. Here, 'ex opiatibus, tanquam a peste, fugiendum est.'"

Again:

"Of opiates, I cannot repeat too often that they are lethal."

As to the precise means to be adopted "for the expulsion of this foreign body," we get no very positive information, beyond what is conveyed in such vague general statements as the following,—"I wish them to distrust expectorant and above all *narcotic* drugs, and to rely more on nature and her *unhindered* powers." While the nearly universal condemnation of medicines, and such puerile sneers as, "if then we wait for a practical pathology, founded on a precise and undisputed chemistry, on the delightful harmony of Messieurs Gütterbock and Preuss, now, alas! at variance concerning certain relations, we may perhaps delay until ourselves and our patients, phymantine, pyine, and all, undergo the final decomposition," show the writer is utterly incapable of appreciating the progress or tendency of modern medical science, and very unlikely to lend a helping hand to advance it.

The indulgence of a classical taste, and a liberal use of appropriate quotations, we consider as eminently ornamental in the machinery of book-making. Even the pedantry of Dr. Hull, which, not satisfied with heading every chapter with a Greek or Latin quotation, either in verse or prose, scatters

them likewise in profusion amongst his pages, we could pardon; but in the name, and for the high honour of medical literature, we must enter our protest against such unworthy and grossly vulgar applications of classical knowledge as contained in the following, which would make the pages of the veriest punning, illiterate scribe blush with shame. Speaking of the administration of enemata, he says:

“It produces the very constipation which it is intended to obviate, because it produces permanent dilatation of the rectum bowel, whose distended and flaccid tunics cannot contract upon and extrude the ordinary and natural volume of contents. Great dilatation and great contraction of this bowel equally disturb its function:

‘Sunt certi fines
Quos ultrà citraque nequit consistere *Rectum*.’ ”

But we think we have quoted enough to show the general spirit and value of this unhappy publication, one of which we can see neither the beginning nor the end, and much less the utility.

The little work of Dr. Madden certainly gives us a more favourable impression of the author, and if it be largely deficient in the element of originality, we find no meaningless sneers at the labours of the histologist or the chemical pathologist. In the general observations which immediately precede the subject matter, the following passage occurs:

“It is perfectly clear that we must learn what tubercle really is, if we would adopt correct views of the disease of which it is the great characteristic. How is this to be done? The mere scalpel of the anatomist will not suffice; for though by it we obtain most valuable information, though we ascertain the position which tubercle occupies in various organs, the relative frequency with which it attacks the different viscera, the changes which it undergoes in itself, and to which its presence gives rise in the parts which are its seat, we do not thus discover its nature, nor perceive clearly how it differs from other morbid products; we must apply higher methods of analysis, we must investigate its intimate structure by the aid of the microscope, and submit it to the test of chemical analysis.”

Preuss and Gütterbock have met more favour from Dr. Madden than from the author of the “Suggestions.” In the section on the chemistry of tubercle we find enumerated the several analyses of Simon, Boudet, Preuss, Gütterbock, &c. The very imperfect analysis of lymph by Dr. Glover is given, without any mention of that made by Geiger under the direction of Schlossberger. Altogether, this section, which occupies but eight small pages, is very imperfect. Under the head of “Histology of Tubercle” we are furnished with some of the

results of the author's microscopical researches, which are only confirmatory of hitherto recognised phenomena; and while the names of Addison, Lebert, and Bennett, are frequently alluded to, all mention of the labours of Vogel, or of his valuable *Icones Histologiæ Pathologiæ*, is omitted altogether. The three remaining sections of the first part of the book are devoted to the consideration of the state of the blood in phthisis, the state of nutrition, and the identity of scrofulous and tubercular disease; all occupied with a brief *resumé* of the labours of others, which, owing to the small size of the work, is very much abridged, indeed so much so as to prevent it from ever becoming a standard of reference. The second part treats of the "Manifested Disease," under which head we find a number of sections. The first, on "The Forms and Varieties of the Disease," is extremely imperfect; but on this point our author thus excuses himself:

"As I am not writing a systematic work on phthisis, it is not necessary to enter more particularly into a consideration of the varieties of the disease, which are continually presented to our notice in practice. They involve no new *principles*, and it is with principles generally, and not with specialties, that these pages are occupied."

We regret that the following out this idea should have resulted in the production of a work of very limited, if any, utility;—too imperfect to become a text-book for students, too brief and not sufficiently *clinical* for the practical man, and not *special* enough for the philosophic inquirer. We should really find a considerable difficulty in assigning it an appropriate place in a medical library.

We are next presented with a very hasty sketch of *some* of the symptoms, while a long section is devoted to the question of "Analogies with Diseases arising from morbid Poisons," in which, notwithstanding a long category of diseases which result from morbid poisons, with their principal symptoms, we cannot help thinking the author has omitted everything like proof of his position, whether it be true or not. Mercurial action, painter's colic, syphilis, glanders, &c., are described, when, without any previous allusion to phthisis, we are suddenly informed "*such are the functional resemblances.*" This statement is followed by a detail of some observations on tubercle by Louis and others, but the application of the argument is altogether imperfect, and instead we find the following conclusion:

"Our comparative sketch is thus concluded; and it appears to me impossible to read what has been written without being powerfully impressed with the striking resemblance which obtains between the two series of morbid actions. There are the same extensive

functional disturbances, the fever, the profuse unhealthy sweats, the disordered secretions, the emaciation, the prostration, and the same wide-spread organic lesions. Must not the causes of effects so similar be themselves similar? Must they not, to say the least, have something common in their nature?

The section on diagnosis is, like the others, a compilation, and even in this point of view too hasty and brief to be of value; while that on treatment, indulging more in disquisition than clinical facts, deserves little notice.

Before leaving this subject we would again earnestly call attention to the important advantages presented by the provincial hospitals for clinical observation. We can point with pleasure to many instances in which they have been very fully availed of, both in England and Ireland, and with the most successful results to medicine. To our friends at home we would offer a word of friendly exhortation, particularly at a moment when we anticipate a vigorous impulse to professional interests in the provinces from the recent establishment of the Queen's Colleges. Well acquainted as we are with the high standard of education which is to be found amongst our medical brethren in the north and south, we have only to regret that their labours have been hitherto conducted silently, though usefully, and even, within a limited sphere, effectively. Henceforward we cannot but hope for a better appreciation of the requirements of medical science, not only as to the tendency which should be given to special labours, but also as to the necessity of making them known to the world. Indeed, both for our capital and the provinces, we foresee the approach of a new medical era.

The First Medical Report of the Hospital for Consumption and Diseases of the Chest. Presented to the Committee of Management by the Physicians of the Institution. London, Churchill. 1849. 8vo. pp. 42.

WE have perused this Report with unfeigned pleasure. Nothing equal to it in value has ever emanated from a British hospital; and nothing, we verily believe, so likely to leave a permanent impression upon the medical investigators of our time. We have here placed before us a strict statistical analysis of the most important facts concerning 4358 cases of consumption, a greater number than has been yet submitted to a similar process of analysis, and having the stronger claim upon our attention, as the reporters state, from its including in it only those in whom the existence of the disease admitted of

no doubt." The Report is the collective production of *all* the medical officers, with the exception of Dr. W. H. Walshe, who, we know not why, separated himself from his colleagues, and published a distinct report in the *British and Foreign Medico-Chirurgical Review*, in January, 1849.

When we saw the names of six physicians appended to the present Report, we could not help feeling astonishment, mingled with deep satisfaction, to think that, in these days of jealous rivalries, six men could be found to unite for a common scientific purpose, in a task which obviously involved great care and labour, and the performance of which required something more than board-room good feeling among those engaged in it. Without further preface we shall now lay before our readers the chief results of their inquiries.

The Report is arranged under the following heads: 1st, the number of patients treated, and the facts in their history which have reference to the origin and progress of consumption; 2nd, some of the principal signs and symptoms of the disease; 3rd, the duration of the disease, and the results of treatment.

The first table simply informs us that out of the 4358 cases analysed, 888 were in-patients. In the second we find that of these 888, 542 or 61 per cent., were males; and that out of the 3470 out-patients, 2137 or, as nearly as possible, 61 per cent. also, were males. This, as is remarked in the Report, shows that the common idea of phthisis being more prevalent among females than males, is scarcely in accordance with observations made in London, though the writers are quite aware that the common notion upon this matter is borne out by those made in the country (*a*). But they do not seem to be aware that the fact had been previously noticed many years since, and that the greater prevalence of phthisis amongst males than females, in the admissions into the Royal Infirmary of Edinburgh during the years 1833 to 1837, was commented on in a Report published by Dr. Home, in the forty-ninth volume of the *Edinburgh Medical and Surgical Journal*: the numbers being 185 males and 112 females, while the admissions for all diseases during the same period were 4512 males and 4749 females.

Table 3 shows the ages in decennial periods of 2679 males, and 1679 females, labouring under pulmonary consumption, and the per centages of the sexes at each period of life. From this table it is inferred that the liability to con-

(*a*) This fact has been carefully examined by Dr. Duncan in his essay on the statistics of phthisis in our last and present Numbers, and very important principles deduced therefrom.

sumption is greatest in both sexes from twenty-five to thirty-five years of age. This agrees, as far as comparison can be made, with the tables given by Sir James Clark, who states the maximum mortality to be at the age of 30. It is further proved by the table that under twenty-five years of age the liability is greater in females than in males by nearly 10 per cent. ; whilst above thirty-five, the liability is greater in males than in females by about 12 per cent. The authors consider the greater liability of females to the disease, before the age of 25, to depend in some measure upon the earlier manifestation of hereditary predisposition in them than in males. But while the Report before us compels our assent to this observation, we think it must be fairly allowed that there are other and more obvious modes of accounting for the fact. At the age of 25, speaking generally, woman has felt all the emotions, and passed through most of the trials, she can experience. The frame, not yet developed to its full maturity, has been already shaken, if not mayhap shattered, by the influence of the most powerful moral emotions and physical sensations, which can affect her delicate organization. We will not affirm that the precise contrary to this holds with the other sex, but that the most fiery trials of man,—the daily cares for the bread of poverty, the anxieties ever awaiting upon commercial life with its manifold fluctuations, the perpetual wear and tear of the mind engaged in literary toil or political strife,—do for the most part affect him at a much later period of his existence than that just named, admits of no doubt. We believe that if this Report extended to all ranks of society, the authors would not arrive at a different result, but that they would ever find a greater proportionate number of phthisical females before the age of 25, and of males after that period. But this point has been so fully and ably discussed by Dr. Duncan in our present Number that we feel we need not delay on it here.

The moral causes of disease cannot be made the subject of such statistical analysis as may be relied upon; hence their influence can only be computed in a very general manner. They are in this respect a stumbling-block in the way of the many who in the present day boldly advance the claim of statistics to be the sole arbitrator and mode of proof in medical questions. We should be indeed rash, in the face of this Report, to deny the immense benefits which *sound* statistics are capable of conferring upon medicine; but we warn those who, in their researches concerning etiology, and many other important points connected with disease, forget the influence of these causes, that they will find ever-recurring insoluble phenomena,

which resist the whole force of the strongest statistical battery that can be brought to bear upon them. If there be any disease, concerning which these remarks can be most justly made, it is phthisis, which indubitably owes its origin in a large number of cases to mental emotions.

But we must now give the inference from this table in the words of the Report:

“On the other hand, males are subjected to various influences, resulting from their pursuits, habits of life, trades, and occupations, tending to the development of the disease at a later period of life. The practical conclusion, however, to be derived from the examination of these facts, is this, that the period of human life from 25 to 35 is a most important one in both sexes, as far as the development of consumptive disease is concerned: hence the peculiar necessity of guarding against all those circumstances which may tend to the production of the disease, and of carefully watching the earliest indications of its approach. The vigilance always necessary is especially requisite in the case of females from 15 to 25, a period of life at which the liability to disease is nearly as great as it is from 25 to 35, when it has reached its maximum.”—p. 10.

The next six tables are occupied with the consideration of the social condition, meaning by this term the married, single, or widowed condition of the patients, and their trade or occupation. The influence of occupation in engendering the disease has engaged the serious attention of the authors, as of all philosophic physicians who have preceded them in the inquiry. The difficulties of this investigation are indeed almost insurmountable, for together with the impossibility of knowing accurately the exact number of persons engaged in each occupation, the existence of certain “other influences conjoined with those necessarily belonging to the occupation itself,” must render us cautious in accepting inferences from even such carefully drawn up tables as those in the Report. But it is not the fault of the writers if there is any error on this head, as they themselves indicate the above-named grounds for distrust. They have greatly diminished the chief difficulty by comparing the occupations of the consumptive patients at the Brompton Hospital, with those of the patients at a London hospital for general disease. From this comparison the authors are led to assign a high place, as regards liability to consumption, to clerks and shopmen, printers and compositors, among the patients at the Consumption Hospital; while to tailors they assign a great liability to disease in general, as well as to phthisis (a).

(a) We have had good opportunity of observing this. Tailors are not only very subject to low forms of disease, but, as may be expected, are very apt to succumb to them.

We are much struck with this last result of the comparison. Sir James Clark and all other observers have previously remarked upon the tendency of this latter trade to consumption: that they are also very liable to disease in general most clearly proves the difficulties of the investigation. It has been said from time immemorial that, the strained and peculiar posture of a tailor gives him a tendency to pulmonary consumption, and that, as this is almost indispensable in his calling, his *trade* gives him a predisposition to the disease; but let us consider the "other influences conjoined with those necessarily belonging to the occupation itself." His livelihood is irregular; at various parts of the year he is for weeks without employment; in one portion of every week he is pressed to the utmost of his endurance; frequently in its first portion he has hardly enough to do to keep him from irregularities still more hurtful. As a class they are notoriously intemperate. A great number of them work in one room, with no more than *sewing space* from each other. From a taste for roving which seems inherent in their craft, they frequently, as they express it, go on the tramp for work, which pretty generally produces privations and exposure, if it does not end in the poor-house. Add to this, that a large proportion of tailors are single men, and therefore the victims of syphilis to an immense extent; and we have sufficient grounds for stating that their *occupation* simply, forms but a portion of the cause of their liability to phthisis.

Hereditary predisposition constitutes the subject of the next six tables. The general result of these tables is decidedly in favour of the opinion, that a great influence is exercised by the parent in transmitting phthisis to the child, inasmuch as "nearly one in every four of the consumptive patients at this hospital, was born of a consumptive parent." Perhaps the most remarkable table in the whole Report is the fifteenth, wherein it is shown that the father transmits consumptive disease to the sons in 59·4 per cent., to the daughters in only 43·5 per cent.; the mother to the sons in 40·6 per cent., but to the daughters in 56·5 per cent. This most singular proof of the hereditary influence in general, and specially in relation to the sexes, is worthy of the utmost attention. These tables conclude the first division of the Report, which, in the future Reports promised to us, we hope to find greatly amplified. It is of infinitely greater importance than the remaining two. The authors have indeed told us that many important parts of the subject are still under investigation, such as the connexion of scrofula and consumption, the influence of locality, of habits of life, or of previous disease, in producing consumption; for these we anxiously wait, being well persuaded that it will tend to a greater

amount of practical benefit that these and such like facts should be thoroughly made out, than that we should go on practising a grotesque arithmetic as regards hemoptysis, interrupted breathing, or prolonged expiration. We want undoubtedly, even at this advanced stage of inquiry into tuberculous maladies, a complete knowledge of their constitutional, climatic, and social antecedents. But, beyond all comparison, the most important facts to be yet arrived at are those bearing upon the relation of phthisis to previous disease. We have had of late days something more than enough of pathological antagonisms; we greatly desiderate exact researches into the *sequences of disease*,—the relations through a whole life of one great constitutional malady to another,—of phthisis, for example, to rheumatism, to gout, to albuminuria, to the venereal poison, to typhus, and to the exanthemata in general; or, on the other hand, the relations of a profound constitutional dyscrasia to lesions of the great vital organs, as of the heart, &c.

In the second portion of the Report, the first five tables are taken up with the consideration of the diagnostic value of Dr. Hutchinson's observations upon the vital capacity of the lungs in phthisis. That gentleman himself conducted most of the experiments at the Brompton Hospital, the result of which is certainly most highly favourable to the value of his ingenious invention, the spirometer. The nineteenth table shows the vital capacity of phthisical patients, taken indiscriminately, without reference to the stage of the disease, compared with that of the same number of healthy individuals; the average difference being 93 cubic inches, or 42 per cent. in 415 cases observed. The next two tables show in a striking manner the diminished vital capacity as the disease advances, for in 241 cases observed in the stage *before* softening, the difference was found to be 74 cubic inches, or 33 per cent.; while in 174 cases observed in the stage *after* softening, the difference amounted to no less than 116 cubic inches, or 52 per cent. The next four tables concluding this division of the Report confirm the general opinion of the great value of hemoptysis as a symptom of phthisis. In 1381 cases, spitting of blood occurred, at some period or other of the disease, in 870 individuals; that is, in the ratio of 63 per cent. Our authors have arrived at the conclusion, that sex exercises scarcely any appreciable influence in the production of this symptom, 62 per cent. having been males, 65 per cent. females; a result, we must confess, which does not much surprise us. The twenty-fourth table exhibits a fact which does not accord with the general experience of the profession, namely, that while in males hemoptysis appeared uninfluenced by *age*, being as frequent before as after the age

of 35, in females the proportion of cases is greater to the extent of 10 per cent. before that age than after.

“In fact,” to quote the words of the Report, “our observations show that hemoptysis occurs more frequently during the *earlier part* of female life, than at that period when the functions of the uterus begin to be suspended.”—p. 29.

The early supervention of spitting of blood in both sexes, the most important part by far of its history, is clearly seen in the twenty-fifth table, wherein it is shown that, in the proportion nearly of 3 to 1, it is more frequent in the first period of the disease than in the later stages; a per centage, from obvious considerations, more likely to be below than above the truth.

The third division of the Report opens with a most admirably drawn-up table, showing the duration of phthisis in 215 cases, viz., 147 males and 68 females, arranged according to age and sex. From this table it appears that considerably more than half the entire number of cases were fatal within a period of eighteen months. Another curious fact is deducible from this table, namely, that the disease is more rapidly fatal amongst males than females; of 123 cases which terminated within eighteen months, 89, or 60·5 per cent. were males. The twenty-seventh and twenty-eighth tables are drawn up to show the results of treatment, from which it appears that in 36 per cent. of the cases, benefit was conferred; material relief in nearly 25 per cent.; arrest of the disease in nearly 6 per cent.,—such an arrest, we are modestly told by the reporters, as “a desire not to speak too confidently alone forbids to designate as cure.” These tables are drawn up from in-patients only, the result of treatment among the out-patients having been by no means so satisfactory.

The concluding portion of this division of the Report is taken up with a brief consideration of the treatment, prefaced by a description of the Brompton Hospital. Among other excellent arrangements, we are told that the method of ventilation devised by Dr. Arnott is used here, “and which is so arranged as to supply warm fresh air in a continuous stream, at the rate of 2160 cubic feet per minute, thus allowing to each patient, during that time, more than twenty-three cubic feet. This air reaches the wards so modified as to keep them at the uniform temperature of nearly 65° in winter and summer.”—p. 37. It is impossible to overrate the great advantages of such a system as this, in the cold, damp, and variable climate of these countries. In the winter and early spring there can be no doubt that many lives would be saved, and more prolonged, if we could place our poorer phthisical patients in the condi-

tions existing at the Brompton Hospital. But we feel some hesitation in absolutely stating that these conditions would much increase the chance of cure, or of relief, during the finer and warmer parts of the year, or even, among certain patients, at any season. If the patient be in the possession of moderate strength, be not more than usually liable to intercurrent attacks of pneumonia or pleuritis, and, above all, not so completely a pauper as to be unable to obtain the necessaries, with some of the comforts of life, we think decided benefit accrues from exposure to pure, and, if we may use the phrase, *unmedicated* air. We know that there are persons who look upon the air of a thoroughly ventilated, well-arranged, not over-crowded hospital, like the admirable charity at Brompton, as pure enough, and fresh enough, for any purpose; just as there are well-meaning physicians, who consider the noble lunatic asylum of modern days, with its gardens and corridors, its gentle keepers and kindly doctors, as an actual elysium for a man, even though he be not quite so mad as his *relations* suppose; but our own experience leads us to the opinion, that, during the favourable seasons of the year, the open air affords at least an equal chance to the pthysical sufferer, as the best regulated hospital. More particularly does this hold good when the patient is taking cod-liver oil. We have observed that patients when confined in an hospital are sooner nauseated by this remedy; and in the employment of this agent, its prolonged use is of the greatest importance. Everything which renders the stomachs of our patients less tolerant of this most valuable remedy, renders their cure less probable. Benefit obtained, during residence in an hospital, under the use of the oil, we have seen to be confirmed, and often increased, by exercise in the open air, its use being still persisted in. We may add that, if the oil agrees at all, it is likely to prevent the patient feeling so acutely the influence of the only agent that can injure him, namely, cold(a).

Among the remedies employed, naphtha is first named, and, as we expected, its use produced no beneficial effect, except in the complication of bronchitis attended with profuse secretion. This much-vaunted remedy is indeed already well nigh forgotten, as all unbiassed observers now admit that its action is

(a) We hope we shall not be misunderstood by our readers as counselling, under all circumstances, *unlimited* exposure, or as wishing to throw doubt upon the conclusions of the reporters; but we could not refrain from making these suggestions, fearing lest the evidently greater benefits obtained by the in-patients than the out-patients should induce them to imagine that the carefully kept atmosphere of the hospital was the sole cause of the difference: our object will be gained if our observations stimulate the authors to further inquiry.

but that of a sedative. Of iron it is stated, that "in the first stage of the disease, in the absence of pulmonary congestion and hæmoptysis, it has been found useful to the extent of arresting its progress;" and in the later stages "an increase of strength, and a temporary improvement of general health," have been obtained. This is high, but not undeserved praise. There is no remedy, next to cod-liver oil, at all approaching steel in its effects upon tubercular disease; and even when, the oil being given as the main remedy, from the production of nausea by its long use, or by the persistence of diarrhœa, we are often compelled to resort to a temporary substitute; in such cases, the citrate, the iodide, and the acetate of iron, will be found of great value. It is our habit in chlorotic females, or in any individuals who have a decided aversion to the *after-taste* of the oil (which we may add, is the worst part of its taste), to give one of these preparations at the same time, the peculiar flavour of the steel eminently adapting it for the prevention of this.

The next remedy mentioned is the cod-liver oil, of which it may be fairly stated, that there has never yet been proposed an agent for the relief or cure of phthisis, whose merits at all approach its *proved* excellence. Our confidence in making this statement might be very properly based on this Report exclusively, but, satisfactory as are the conclusions therein arrived at, our experience of its use in a considerably larger number of cases than are here tabulated, leads us to confirm in the most decisive manner the opinions of the reporters. We shall not enter as fully into the consideration of the wonderful powers of this oil as its intrinsic merits deserve, for we intend in our next Number to give an analysis of the excellent treatises of Dr. Bennett(a) and Dr. De Jongh, on the *oleum jecoris aselli*; but we must not defer, even for three months, the publication of the following facts: In 542 cases, 190 males and 103 females, taken at all stages and ages, in 63 per cent. the symptoms improved; in 18 per cent. the disease was arrested; and we further find that, when taken in the first stage, the disease was arrested in 28 per cent. Of the whole number treated at the hospital, the disease was arrested in only 5 per cent.; while we have just seen, that of those treated by *this* remedy, it was arrested in 18 per cent. Let it be

(a) We feel necessitated to apologize for a certain tardiness in bringing this subject before our readers, the more particularly as we have also, by our delay, done some injustice to the labours of the Edinburgh professor who first brought the cod liver oil prominently under the notice of the British medical public.

remembered that the actual existence of the disease was clearly made out in these cases, and we have here proof of its powers which it is impossible to refute or gainsay. It must be allowed that it is now *demonstrated* to be the most efficient agent "in controlling the symptoms of pulmonary consumption, if not of arresting the disease," that the profession is at present possessed of. The reporters warn the over-sanguine not to expect *always* to cure, or even to relieve phthisis by its use, having seen it sometimes fail, and its temporary benefits sometimes followed by relapse and rapid progress to a fatal termination.

We have thus briefly brought the main results of this careful and admirable analysis of phthisis before our readers. We have already almost exhausted our praise, and hardly think it necessary to repeat our opinion of its great merit, and to advise most strenuously all those who wish for accurate information upon the all-important matter of which it treats, to procure and study this Report.

Portrait of the late Abraham Colles, Professor of Surgery to the Royal College of Surgeons in Ireland. Engraved by C. LUCAS, from a Painting by MARTIN CREGAN, P. R. H. A. Dublin, Hodges and Smith. 1850.

IN a recent Number of our Journal^(a) we awarded a due meed of praise to Mr. Stone, of London, for his efforts to afford the profession a series of portraits of the most eminent medical men of the day; and we are happy now to have it in our power to bring under the notice of our readers the above spirited and faithful likeness of one of the most eminent lights of Irish surgery, who, though no longer amongst us, still lives in the hearts of many,—his pupils, his contemporaries, and his friends. We have only just received a finished proof of Mr. Colles' portrait, but we are unwilling to let the present opportunity elapse without noticing its publication. It is not only a beautiful engraving, but most truthfully portrays the characteristic expression of benevolence, skill, and deep thought for which his countenance was so remarkable, and as such cannot fail to prove highly acceptable to all who appreciated and therefore to all who knew him.

(a) Vol. vii. p. 199.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

NINTH SESSION.

Caries of the Petrous portion of the Temporal Bone, Abscess in the Substance of the Brain, and Lodgment of Matter between the Dura Mater and the Cranium.—Dr. Banks detailed the following case, and exhibited the recent specimens. J. L., æt. 26, entered the Hardwicke Fever Hospital, November 22, 1847, complaining of pain in his forehead, and a general feeling of illness; his look was dull and heavy. He had a slight discharge of purulent matter from the ear for many years, but three months before his admission it became more profuse and fetid, running out of his ear on the pillow as he lay in bed. Five days before entering the hospital he had slight shiverings, sickness of stomach, and pain in his head. He had latterly become deaf, but the state of the ear never attracted his attention particularly. He had no pain about the mastoid process or in the ear, until after his admission into the hospital. While in hospital the prominent symptoms were, pain in the forehead, very intense at intervals, sometimes altogether absent; feverish heat of skin; the pulse, which was weak, fell occasionally from 80 to 60 and 54; the bowels were constipated; there was a very slight purulent discharge from the ear, of an offensive odour; and he had delirium at intervals. He gradually became heavier and more stupid, the pulse could not be felt at the wrist, and he was insensible for twelve hours before his death. He died thirteen days after his admission into the hospital, and eighteen after the occurrence of the rigors and sickness of stomach.

Autopsy.—There was caries of the petrous portion of the temporal bone, the anterior surface of which was perforated in two places; a probe, introduced through these apertures into the interior of the ear, grated upon loose portions of carious bone. The dura mater cor-

responding to one of the apertures in the bone was also perforated, and presented a dark, sloughy appearance in the immediate vicinity. Corresponding to the carious bone, the brain and its membranes were dark-coloured, and a large abscess existed in the substance of the left middle lobe of the brain, near its inferior surface. There was a second and much larger collection of thick, green, and very fetid pus between the dura mater and the mastoid and petrous portions of the temporal bone, and the lower two-thirds of the left half of the occipital; it extended to the middle line posteriorly and downwards nearly to the foramen magnum. This large abscess had deeply indented the corresponding portion of the brain.

Dr. Banks observed, that although the disease of the bone had obviously existed for a considerable period, it was probable that the cerebral abscess commenced at the time when the patient first suffered from acute symptoms, namely, five days previously to his admission into the hospital, and eighteen before his death.

Fever, followed by Pneumonia, with an Absence of the usual microscopic Characters of the latter Disease.—Dr. Aldridge said, that the case he was about to bring forward was one that had been under the care of Dr. Hudson, who had furnished him with the following history of the case:

J. P., æt. 18, a well made, and previously healthy lad, was admitted into the Navan Fever Hospital, on the 18th November, on the fourth day of fever. The disease was very mild, not requiring any active medical treatment, and terminated by crisis on the ninth day. He convalesced satisfactorily till the 1st instant, when he relapsed. On his relapse, cough came on, without expectoration. The breathing became hurried (36), and the pulse very rapid and small (130); tongue brown and dry.

On the 3rd, enlargement of the spleen was detected by percussion over the angles of the lower ribs. On this and the two following days he had epistaxis to a copious amount.

On percussion the left side of the chest was dull to the summit, and the respiratory murmur was feeble and interrupted, both inspiration and expiration being attended with sibilant râles. It was remarked that the sounds of the heart were heard over the upper part of the left side, anteriorly and posteriorly.

The treatment pursued from the 1st to the 6th of December consisted in the application of leeches, the use of tartar emetic in small doses, dry-cupping the side over the spleen, and lastly in an attempt to affect the patient rapidly by mercury. This did not succeed, and he died during the night of the 6th.

Examination of the Body thirty Hours after Death.—The left lung, with the exception of the apex anteriorly, was dense, heavy, and of a dark violet colour externally; the lower lobe was red and friable, and on closely examining its section, it appeared to be studded with extremely minute granules. This appearance could not be detected in the upper lobe, which was much congested, but not friable.

The right lung was healthy, as was also the liver. The spleen was very much enlarged, weighing two pounds fourteen ounces; its colour dark purple, covered in portions with shreds of lymph(?), and containing deposits of a cheesy-looking matter. The mucous follicles of the ileum were enlarged and ulcerated. The mesenteric glands were somewhat enlarged, dark-coloured, and congested.

Dr. Aldridge then produced a portion of the lung of this patient, which he stated to present the ordinary characters of red hepatization; it did not crepitate, and it sunk in water. When a lung which had been affected with hepatization was examined under the microscope, certain appearances were presented, which have been similarly described by all histological writers. Upon placing a piece of such a lung under the microscope, a dark, mulberry-coloured granule might be seen, easily distinguishable from every other object in the field of vision. These mulberry-coloured granules or masses were known by the name of "exudation masses;" and Vogel and Lebert, in their works on Pathological Anatomy, had described them similarly. These appearances were likewise found in other organs, and, by comparing them with blood globules, it was ascertained that the exudation masses were many times larger. Now, the most remarkable feature of the present case was, that not one of the exudation masses could be detected, although the lung presented the general characters of pneumonia viz., not crepitating, sinking in water, and allowing a frothy serum to issue from it when cut into; in fact, exhibiting all the anatomical characters of an advanced state of hepatization.

The section of the lung presented a number of small specks, which, when examined under the microscope, presented appearances identical with those represented in Vogel's Pathological Anatomy (Plate III. fig. 13), as occurring in a case of red hepatization of the lung; they were destitute of nuclei, and were the same as the minute bodies described by Lebert, and termed by him "the corpuscles of tubercle," supposing them to be incipient tubercles. The matter which becomes effused upon the intestines in cases of typhus fever presents exactly the same appearance as these corpuscles.

Fracture of the Patella; Subsequent Laceration of soft Parts.—

Dr. Croker King detailed the following case, and exhibited a cast of the limb:

The early history of the case I am about to submit for your consideration does not present any features of peculiar or uncommon interest, being simply one of transverse fracture of the patella produced by muscular contraction.

A gentleman, the subject of the accident, was tripped by the rope of a canal boat, and ineffectually endeavouring to regain his feet, he fell to the ground, from which he was unable to rise without assistance: this occurred on the 29th of September, 1846.

On examination, a fortnight after the receipt of the injury, a transverse fracture of the right patella above its centre was apparent:

the fragments were separated about three-fourths of an inch. The injury was treated in the usual manner ; coaptation of the fragments was accurately maintained, but bony union did not take place.

On the 2nd of March, 1847, five months from the receipt of the accident, the limb was in the following condition : The fragments had become separated to the extent of half an inch. The motions of the knee-joint were still considerably restricted, though it could be slightly bent. The patient could walk tolerably well without the assistance even of a stick. The joint measured thirteen inches and a half in circumference, the tape being carried round the joint at the seat of fracture.

On the following morning I received a hurried summons to visit this gentleman, who resided some distance from town. On my arrival I was informed that on the previous evening (while crossing the room) the knee had suddenly bent under him,—that he suffered a severe shock,—was sensible of something having given way,—and that the knee had burst and bled profusely.

On examination an immense gash presented itself ; it ran across the front of the joint, corresponding to the interval between the fragments, which were now separated at least one inch and a quarter. The wound was half an inch wide and seven inches long, and consequently exceeded in extent half the circumference of the limb. It was occupied by coagula of blood, which had become hard and dry, fourteen hours having elapsed from the receipt of the injury.

I certainly felt much alarm for the safety of the limb on inspecting this formidable wound, as I did not see how the joint could have escaped being laid open. It was evidently the most judicious plan not in any way to disturb the dried coagula. An attempt was made to approximate the edges of the wound. Such was found impracticable, as the skin was adherent to the separated fragments of the patella. The limb was placed on a hollow splint, and the integuments supported by broad strips of adhesive plaster, to prevent the further retraction of the edges of the wound, and the entire was covered with light dressing.

In a few days severe constitutional disturbance supervened ; the tongue became furred ; the pulse beat hard and frequent ; and suppuration was freely established. On pressing the lower fragment *it yielded*, and a copious discharge of purulent matter issued from the centre of the wound, and from the angles a transparent fluid, presenting the appearance of synovia : the fever quickly assumed a hectic character.

A deep-seated abscess now formed on the inside of the limb, extending upwards for at least eight inches. The patient's countenance was expressive of much distress. The nights were passed with little sleep ; and notwithstanding the exhibition of three grains of solid opium on the previous evening, the patient had enjoyed little rest, being constantly disturbed by pain and severe spasms extending up the limb. The pulse had risen to 120 ; the tongue was

thickly coated, and the patient rapidly emaciating. There were, in addition, diarrhœa with bloody discharges, cutting pains in the abdomen, and night perspirations ;—in fact the case was altogether as unpromising as it well could be, and the question of amputation as the only probable means of saving the patient's life of course suggested itself : however, the liberation of the contents of this extensive abscess was first determined on. I made an incision of an inch and a half long, four inches above the joint, and gave exit to ten ounces of most abominably fetid pus, mixed with clots of blood and sulphuretted hydrogen gas, which bubbled up through the matter ; in fact just such a discharge as we see in a suppurating hematocele. On the following day, the matter having gravitated in considerable quantity and accumulated in the vicinity of the knee, I passed a director through the wound downwards to the most depending position, and, cutting on its extremity, thus made a counter opening. This great sinus being thus completely emptied, its walls were carefully and in the most accurate manner approximated by means of a circular bandage and well-adjusted compresses.

On visiting the patient on the following day, the change which had taken place in his general appearance was not a little remarkable. The haggard and fretted look had been replaced by a joyous expression. On inquiring how he felt, he replied, "gaily ;" he had, in fact, slept soundly ; experienced no pain ; the pulse had fallen to 80 ; the diarrhœa and night perspirations had ceased, and never returned ; and, what certainly surprised me, the walls of the sinus had become adherent at every point ; there was not a single drop of discharge from the incisions, nor was there the slightest tension.

From this time the case progressed most favourably ; the amount of discharge from the wound, which was a little tedious in healing, daily diminished, and cicatrization was complete on the 4th of April, thirty-three days from the occurrence of the injury.

The cast which I exhibit was taken seven months subsequently. You observe a great transverse cicatrix corresponding to the wound, and two smaller perpendicular cicatrices marking the site of the incisions. The fragments are at present two inches apart, and the external condyle of the femur is to be plainly seen and felt in the interval, apparently having no other covering than the integuments ; and you may perceive that the transverse cicatrix runs *immediately* above the lower fragment.

The separation and the apparent total absence of ligamentous union between the fragments imperatively demanded some mechanical support to prevent a second yielding of the limb. I was enabled to obtain a very efficient apparatus from Mr. Millikin. It consists of sole leather so prepared as to mould itself accurately on the irregularities of the joint. This gives complete support, and the gentleman is able to walk about without any other mechanical assistance.

I considered the case as worthy of the notice of the Society from the rarity of the injury, as I have been able to find only *one* similar

case on record, which, however, differs from the one under consideration in the result, as the removal of the limb was necessary. It is noticed in the second volume of Bell's *Operative Surgery*, p. 204, in the following manner: "I have seen a very terrible accident follow the imperfect cure of the fractured patella. The bone had united by ligament, and this ligament had incorporated with the skin in such a manner that it lost much of its pliancy. The poor man was carrying a burthen and fell backward, the knee sunk under him, and the whole forepart of the joint was laid open by laceration. The case terminated in amputation of the limb."

The sudden remission of the severe constitutional symptoms in this case was as remarkable as it was unexpected. I adduce it as a singular feature, and as a circumstance so unusual, that I question how far the happy result of this case should influence our prognosis or decision in a similar injury.

Acute Necrosis of the Tibia.—Dr. Hutton said that the specimen he was about to lay before the Society exhibited remarkable results of morbid action occurring, within a very short space of time, in a case of diffuse inflammation. The subject from whom the specimen had been procured was a girl aged about fourteen years, who was admitted into the Richmond Hospital on the 21st of August last. Two or three days previously she had been first seized with sudden and severe pain in the left leg, extending throughout the whole length of the tibia. This was attended with high fever. On her admission into hospital, the left limb was swollen from the knee to the ankle; it was of a deep red colour, and presented distinct fluctuation. The attendant fever was of the irritative character, marked by great anxiety, quick, weak pulse, hot and moist skin, and hurried breathing. Free incisions were immediately made down to the surface of the bone, and a quantity of matter discharged. This was followed by temporary relief; the swelling of the limb subsided to a certain extent, the redness diminished, and the fever became mitigated. But in two or three days a change for the worse took place; the knee and lower part of the thigh became swollen and very painful, and the fever again increased; matter formed in the knee-joint, and she was seized with diarrhœa, which soon passed into dysentery, and the patient finally died from exhaustion on the 16th of September, the twenty-sixth day after her admission into the hospital.

Autopsy.—The rectum and sigmoid flexure of the colon were found in a state of ulceration; but the condition of the tibia, in which bone the disease originated, formed the most interesting part of the examination, for it was found that the articulations, both of the ankle and knee, had, in this brief period (twenty-eight days), become affected with a large amount of disease. Both these joints contained a thick, purulent matter, and their cartilages were almost completely destroyed by ulceration, that of the knee-joint less extensively. There were likewise found extensive abscesses between the muscles of the leg and thigh. The tibia was covered at its lower

part with a layer of new bone, perfectly continuous with the epiphysis of the old one. The new osseous layer passed up the limb to a considerable extent, covering a large portion of the surface of the original bone, which had, until the patient's death, evidently retained its vitality, and was *closely* connected with the new layer. A considerable portion of the bone, at its upper part, had, on the contrary, become entirely necrosed. Upon making a longitudinal section of the bone, the medullary membrane, at the lower part, corresponding to that portion of the bone which had retained its vitality, was red and highly vascular, and the medullary cavity was filled with lymph; whilst, at the upper and completely necrosed part, this membrane presented no appearance of vascularity, and the medullary cavity was filled with unorganized lymph and purulent matter. In one part of the tibia a very thin lamina of dead bone was interposed between the layer of new bone and the living portion of the original bone. This may have been the case to a greater extent than was apparent, for it may have occurred that where the new layer had become intimately adherent to the original bone, a thin lamina of diseased bone may have been previously absorbed, and so admitted of this close connexion. On the whole the case was interesting, as showing that in the short period of twenty-eight days ulceration of the articular cartilages may take place to a great extent; and also that necrosis, with the reparatory process which usually attends it, will sometimes advance with remarkable rapidity in cases of diffuse inflammation and phlebitis.—*Museum, Richmond Hospital.*

Fracture of the Spine.—Dr. Mac Donnell stated, that the preparation he had to lay before the Society was a portion of the spine of a young soldier, who in the month of June last fell from a considerable height. He was brought into the Richmond Hospital early in the morning after the occurrence of the accident, complaining of severe pain in the lower part of the dorsal region upon making the slightest movement. He was deprived of the power of moving the lower extremities, and sensation was destroyed from the knees downwards. Upon examining the back, there was found a considerable projection of the spinous process of one of the last dorsal vertebræ. There was retention of urine, and the power of the sphincter ani was entirely lost. In the course of a short time after admission, the pain and inflammatory symptoms, which followed the receipt of the injury, began to subside; his system was brought under the influence of mercury, and his condition seemed to improve. A remarkable change also took place in the relative positions of the displaced parts, the projecting spinous process having fallen very much into its natural position, so as to render it difficult (had not the fact been well ascertained at an earlier period of the case) to believe that there had been a fracture at all. Upon moving the man in a cautious manner, with a view to examine the spine, it was found, that with any species of motion the injured

parts were made to undergo, there was not the slightest crepitus to be detected. No doubt, however, could exist as to the nature of the injury, and it was therefore confidently anticipated, that at the end of six or eight weeks the case would terminate fatally. This opinion was strengthened by observing, that the patient rapidly lost flesh, had a very pallid countenance, and that a large bed-sore had formed on his sacrum, with every other appearance suggestive of the probability that he would sink and die about the above mentioned period. But although the progress of the case up to this moment indicated such a termination, an unusual improvement now commenced to show itself, for at this time the man gradually rallied to a certain extent, so that for about six or eight weeks more there was a progressive amendment of his general condition. The pallor of his countenance diminished, he recovered some flesh, and the bed-sore that had formed over the sacrum assumed a more healthy look, and began to close, and for two months from this amendment taking place the appearance of rally was not to be mistaken. He had recovered some slight power of motion in his limbs, and about three months after the accident he was able to move the toes a little. When the bowl of a heated spoon was placed on the sole of the foot, the patient perceived the heat which it imparted, although the general sensibility was lost from the knees downwards. At the same time he recovered some power over the bladder and rectum. However, about four months after the occurrence of the accident, he began once more to lose ground, his face resumed its pallor, his body slowly wasted, he lost his appetite, and the bed-sores reappeared in numbers. In fact, wherever the weight of the limbs or body rested, bed-sores soon formed. An ill-marked hectic fever, unattended with perspirations, slowly set in, and he lingered for about two months longer, when at last death ended his sufferings, the entire duration of the case occupying a period of six months.

Autopsy.—Upon examination after death, it was discovered that a fracture running nearly transversely through the last dorsal vertebra had taken place. The lower fragment was displaced backwards, but to a much less extent than it had been immediately after the occurrence of the accident, and the lower part of the spine was to a certain extent rotated upon the upper. Upon opening the spinal canal, it was found that the spinal marrow was nearly cut through at the part corresponding to the fracture, and softened. The bladder was very much contracted, and presented the anatomical characters of chronic inflammation. It was also slightly thickened, and there lay within it a small calculus composed of the ammoniaco-magnesian phosphate. This calculus, the size of a kidney-bean, was found lying on the neck of the bladder, and had been unquestionably formed during the progress of the case.—*Museum, Richmond Hospital.*

Typhoid Pneumonia.—Dr. Gordon said, the preparation he was about to exhibit derived its chief interest from being an example of

the mode in which the present epidemic (1847) had in a great number of cases proved fatal. A young man, twenty-two years of age, was seized on December 7 with the usual symptoms which precede an attack of the influenza at present epidemic. He was able to continue working at his trade until the 11th, when he was admitted into the Hardwicke Hospital. He had then slight fever, with a sense of great weight at the epigastrium; slight frontal headach and coryza; pulse about 100.

These symptoms continued during Saturday and Sunday. On Monday a remarkable degree of restlessness was observable, and he had a frequent short cough, which came on in paroxysms, and again subsided: he complained of slight pain in his right side. On examining his chest, it was found to be perfectly resonant, both anteriorly and posteriorly, and the only abnormal sound was a slight sonorous râle, which was audible chiefly on the left side. About six hours after this examination was made, he was suddenly seized with weakness, and total prostration of all the vital powers, so as to require the free exhibition of stimuli during that evening.

On the following morning his features were sunk and collapsed; he had a sharp, harassing cough, with but little expectoration; his pulse was 120, small and weak; his skin hot, but his lips were blue, and his extremities becoming cold. On examining the chest, it was found that the upper third of the right side sounded dull on percussion, and that, corresponding to the extent of dullness, there was distinct bronchial respiration and bronchophony; the lower part of the right, and the entire of the left side were perfectly resonant; the respiratory murmur through the left side was natural, but through the lower part of the right side it was puerile.

December 15.—It was found that the dullness was extending downwards over the right side, and bronchial respiration and bronchophony were now audible over almost the entire of this side; the vesicular murmur being audible only in the most inferior part of the lung. He complained of a constant darting pain or stitch in this side, but there was no frottement to be heard. The respiratory murmur through the left side had become puerile, and the sound on percussion loud. The patient had made no attempt to rally from the state of collapse; he was even more sunk, and the act of sitting up in bed, that the chest might be examined posteriorly, nearly produced fainting. He died in the course of the following day, the physical signs not having undergone any change. The *post mortem* examination showed that the right lung was solid; with the exception of its most inferior portion, it was found to be in the state of red hepatization, the second stage of pneumonia of Laennec. It sank in water, yet, though apparently firm, it was very easily broken down. There were also found the anatomical characters of pleuritis. Soft, tenacious lymph was extensively effused over the pulmonary pleura.

Dr. Gordon looked upon this case as an example of typhoid

pneumonia, which was at the present moment very prevalent in this city. He was informed of three similar cases which had occurred in private practice, and proved fatal within the short space of thirty-six hours. He had under his care in hospital, at the present time, five cases of the disease, which were all marked by the suddenness of the attack, and the prostration of the system which immediately ensued.

Dr. Gordon said, that we were acquainted with two forms of typhoid pneumonia, which had been epidemic in this country. The first, of which the present case was an example, had been prevalent at different periods since the year 1833, and had been well described by Dr. Stokes, Dr. Hudson, and others. This was the form which was so likely to supervene on typhus fever, erysipelas, &c. &c. The second was first noticed in this city in the year 1841, and its anatomical characters had been brought under the consideration of the Society by Drs. Corrigan and Stokes.

Dr. Gordon remarked in conclusion, that the important features in the present case were:

1st. The suddenness of the attack of pneumonia.

2nd. The complete and immediate prostration with which it was accompanied.

3rd. The rapidity with which bronchial respiration and bronchophony became audible without any previous crepitus, *i. e.* the rapidity with which the lung became solidified, without having passed through the usual premonitory stage of effusion into the air vesicles; for it is to be observed, that not merely was there no crepitus before bronchial respiration and bronchophony were audible at the apex of the lung, but that, in conjunction with the latter signs, there was puerile respiration, and no crepitus audible in the centre of the lung, to which portion the bronchial respiration and bronchophony had on the following day extended.

4th. It was remarkable, that the signs of solidification should commence in the apex of the lung, and from thence proceed downwards, contrary to what is observed in the ordinary forms of pneumonia, and inversely to what we meet in the typhoid form of bronchitis, where the lower portion of the lung is that principally affected. And lastly, the existence of the anatomical characters of pleuritis, though during life there were no physical signs by which it could have been indicated.

Encephaloid Tumour in the Epigastric Region.—Dr. Banks detailed the history of this case (so far as it had been ascertained while under his care in hospital). On the 14th of December, a woman named Harriet Heath, aged fifty-four years, was admitted into the Hardwicke Fever Hospital, labouring under all the symptoms of suffocative catarrh. The face was blue and congested; the difficulty of breathing extreme; and she evidently seemed in a dying state. All over the chest there was evidence of effusion into the bronchial tubes. She stated that for about two years she

had suffered from a severe cough, and for the last six months was sensible of the existence of a tumour in the epigastric region. In this region a pulsating tumour was discovered midway between the xiphoid cartilage and umbilicus, of the size and shape of half an orange, and immovable, but it was evident that the pulsations of the aorta were communicated to it, and raised it forwards with each impulse of the heart. On the day after admission she seemed somewhat better, but towards evening she began to sink, and died at 5, P. M., on the 17th.

Autopsy.—The lungs presented the usual anatomical characters of suffocative catarrh. Upon opening the abdomen a tumour as large as an orange was found closely adherent to the under surface of the left lobe of the liver. It was situated between the layers of the lesser omentum, but was invested with a distinct capsule. It projected considerably beyond the free margin of the liver. It adhered closely to the left lobe, which was deeply indented by its pressure. From the right portion of its circumference a dense fibrous pedicle passed towards the horizontal fissure, in front of the biliary ducts and hepatic vessels; the surface of the tumour was covered with varicose and tortuous veins; and a section of it exhibited the usual anatomical appearances of cephaloma; the liver itself presented an example of cirrhosis, and the spleen was enlarged. The remainder of the abdominal viscera were sound, nor was there a trace of encephaloid disease in any of the organs, either of the chest or abdomen.

The early history of the patient was obscure, owing to her having been brought into hospital in a dying state; during life, however, the tumour did not give the idea of an aneurism, for there was no expansile or diastolic pulsation or *bruit*; the pulsation was evidently communicated to it from the aorta.

Chronic Ulceration of the Stomach.—Dr. King laid before the Society a stomach taken from a woman who came under his observation about eight or nine months previously. He mentioned that at the time he first saw her the principal symptoms complained of were obstinate pyrosis; occasional, but not severe pain in the epigastric region; general emaciation, and obstinate constipation of the bowels. She likewise appeared to be in a state of continual salivation. Various modes of treatment were successively adopted, but he could not say with any marked benefit. While in this state she was admitted into hospital, and appeared to improve for about a fortnight, but was then attacked with ascites and anasarca. During the progress of the treatment for the anasarca the pyrosis subsided, and subsequently both the anasarca and the ascites yielded to treatment, and she appeared to be improving in her general health. She left the hospital and went to the country much relieved, and he lost sight of her for the space of several months. Upon Tuesday last, however, she called upon him, and informed him that the pyrosis had returned, accompanied with frequent vomitings of a thin, transparent fluid. She experienced a strong sense of nausea after eating,

and felt greatly relieved whenever this thin fluid discharge took place from the stomach. On the Thursday following, shortly after having complained of the same sensation of nausea, followed by *tinnitus aurium*, she threw up a small quantity of blood, and died in the course of ten minutes.

Autopsy.—Upon laying open the cavity of the abdomen he found the stomach in a state of enormous distention, and exhibiting that peculiar appearance called “the hour-glass contraction.” Upon cutting into it, it was found to contain a large quantity of coagulated blood. On the posterior wall of the organ there was discovered a circular ulcer larger than a crown-piece, which had destroyed all the tunics of the stomach; but the aperture thus formed had been closed by the pancreas, which was intimately adherent to the circumference of the ulcer. In the centre of that portion of the pancreas which thus formed the bottom of the ulcer, there was seen an opening formed by ulceration in the splenic artery. Upon a former occasion, Dr. Law had exhibited a similar specimen.

Pott's Fracture.—Dr. Robert W. Smith exhibited a remarkable specimen of Pott's fracture, taken from the body of a man, *æt.* 70, who had lately died in the hospital of the South Union Poor House. The injury had been sustained forty years before the period of his death, and the preparation exhibited in the most striking manner all the important characteristic signs of fracture of the lower end of the fibula, with displacement of the foot outwards, *viz.*: the change in the point of incidence of the axis of the leg on the foot; the displacement of the foot outwards; the rotation of the foot upon its axis; the increase of the space between the two malleoli; the prominence of the tibia at the inner side of the leg; the obtuse salient angle opposite the inner malleolus, and the re-entrant obtuse angle at the outer part of the leg, corresponding to the situation of the fracture of the fibula. Were the axis of the leg in this instance prolonged downwards, it would pass altogether internal to the astragalus. The upper surface of the astragalus was directed inwards, and the sole of the foot looked outwards. The lower extremity of the internal malleolus had a truncated appearance, its diameter from before backwards was greatly increased, and its articular surface was no longer in contact with the internal surface of the astragalus, which was now directed downwards. The tendon of the tibialis posticus, and the calcaneo-scaphoid ligament, were of immense strength and thickness, and the former was three-quarters of an inch in breadth, where it wound round the lower end of the tibia, the inferior third of which bone presented a remarkable curve, the convexity of which was directed inwards. The tibia, besides being dislocated inwards, was also displaced forwards, to such an extent as to rest by the anterior half of its lower surface upon the neck of the astragalus, and to touch by its anterior margin the posterior edge of the navicular bone. The external articular surface of the astragalus, which had now become the superior, was enlarged, flattened, and covered with an ivory deposition, which was grooved in the line

of flexion. The malleolar surface of the fibula had undergone similar alterations. The fracture of the fibula had not united by bone, the fragments were connected to each other merely by ligamentous fibres, but the upper extremity of the lower fragment, which had fallen in towards the tibia, had formed for itself in that bone a circular cavity, in which it was retained by a capsular ligament; an imperfect ball and socket joint was thus formed. The individual who was the subject of the injury, walked upon the inner edge of the foot, the tendon of the tibialis posticus and the calcaneo-scapoid ligament upon the inner, and the external malleolar surface (now directed upwards) of the astragalus upon the outer side, supporting the weight of the body.

Congenital Malformation of the Rectum.—Dr. Mayne communicated the particulars of a case of congenital malformation, which had been relieved by operation, and the subject of which had subsequently died from another cause. The case occurred in the hospital of the South Dublin Union, under the care of the Surgeon, Mr. Shannon, to whom Dr. Mayne was indebted for the opportunity of laying the preparation before the Society. The subject, a male child, was born in the hospital, and no malformation was suspected until the morning after its birth, when its mother reported that it had been very restless, would not suck, had vomited whatever liquids it had swallowed, and had no discharge from the bowels. The belly was now tympanitic; the anus appeared natural, but Dr. Shannon having passed in, successively, a catheter and a probe, found that each was arrested at a point about two inches above the outlet; he then introduced a speculum, by which he was enabled to see the obstruction, and succeeded in reaching it with his finger; there was no feeling of distension from above, and consequently the prognosis was very unfavourable; but as the child was nearly moribund, it was decided in consultation to give it the chance (slight as it was) that an operation afforded. The speculum (a silver tube) was passed up to the obstruction, and then a narrow, sharp, French bistoury was guided upwards in the axis of the gut, so as to penetrate the obstruction; on withdrawing the bistoury, a copious discharge of meconium followed, and all the symptoms of distress were relieved; the abdomen subsided, the stomach ceased to be irritable, and so far the operation was attended with success. But the mother proved in this instance a bad nurse, her milk failed, and it became necessary to resort to artificial nutriment, which, however, disagreed with the stomach; the vomiting returned, and the child died on the tenth day.

The examination of the body (now on the table) shows that the lower part of the rectum, for about an inch and a half from the anus, is perfect; the obstruction was not produced by a transverse septum, but by a stricture involving all the tissues; the intestine was considerably dilated above the obstruction.

The operation had here been so far successful, that the stricture was perforated without transfixing the walls of the intestine, or

injuring any of the neighbouring parts; but inspection of the rectum *in situ* shows that the slightest deviation to either side would have caused the point of the instrument to pierce the parietes of the gut. The specimen shows the necessity, in such an operation, of remembering the nearly direct course of the intestine in the recently born infant, and of guiding the perforating instrument as nearly as possible in its axis.

Laceration of the Stomach.—Dr. Hutton exhibited a specimen of laceration of the stomach, and gave the following history of the case.

M.D., aged eight years, was admitted into the Richmond Hospital in August, for strumous ophthalmia. Both corneæ were opaque and studded with numerous very minute ulcers; the child had rather a pale, scrofulous aspect, and was reported by her parents to be liable to indigestion, but in other respects she seemed to be in tolerable health. She was directed to take three grains of the bromide of potassium, twice or thrice in the day; blisters were applied from time to time to the temples and behind the ears, and eye-drops of different kinds employed. Under this treatment she seemed to improve considerably. Her appetite, general condition, and animal spirits became very good, and the cornea of one eye had nearly resumed its healthy appearance. It was observed that she had a remarkable desire for the fat of meat, and would eat with avidity the portions which other patients left. She was regular in her bowels, and was never heard to complain of pain in the stomach. The treatment was continued with little intermission until the 14th of November, 1846, when, in the evening, she complained of nausea. On the succeeding day she vomited at intervals, for some hours; this ceased early in the afternoon of the same day. The resident pupil reported that she had no pain or tenderness of the abdomen, but complained of headach; her pulse was quick and easily compressed. On the morning of the 16th she was evidently sinking, but still complained only of pain in her head; the extremities were cold, and her pulse scarcely perceptible. In the evening she became comatose, and died on the following morning.

In ten hours after death the autopsy was carefully made, and revealed the following extraordinary appearances. There were the usual general evidences of peritonitis, effusion of lymph, &c. The stomach lay collapsed. It was removed with great care, and accurately examined. At its cardiac extremity there was a very large rent, four inches in extent, and there were two or three small oval openings, about a quarter of an inch in diameter, in the vicinity of the rent. On examining the coats of the stomach, they were found extremely attenuated at its cardiac extremity, thus accounting for the extent to which this organ had been torn. The serous membrane, to a considerable extent in the neighbourhood of the laceration, was almost laid bare, the mucous membrane having entirely disappeared, leaving only the serous, with a few muscular fibres. The pyloric end of the stomach contrasted remarkably with the attenuated cardiac extremity, for there the coats were unusually

thick. Very little appearance of inflammation was manifest on the internal surface; there was scarcely any vascularity, nor was the mucous membrane of the pyloric extremity at all softened. In the ileum there were two or three attenuated patches, but no ulceration. This absorption of the inner coats of the stomach, without inflammation, was, Dr. Hutton observed, somewhat analogous to the condition described by authors, as the result of digestion after death, by the organ itself, but the subjects of such cases have generally been known to have taken a full meal a short time before a sudden death. In the present case, the laceration seems to have taken place in the efforts of vomiting, and the result was probably facilitated by the hypertrophied state of the muscular coat at the pyloric extremity. The existence of extensive peritonitis indicated that the laceration occurred some time before death. From the period of the first occurrence of nausea and vomiting, to her death, three days elapsed.

Congenital Malformation of the Tarsus.—Mr. Robert W. Smith brought before the notice of the Society a preparation of the skeleton of the foot, in which the os calcis and os naviculare formed but one bone. The external extremity of the navicular bone, prolonged outwards and backwards, was united to the upper portion of the cuboidal surface of the os calcis; the anterior inferior aspect of this prolonged portion presented an articulating surface, which was adapted to the posterior part of the superior surface of the cuboid bone; the os naviculare, which thus possessed in front four articulating facettes, was also joined to the os calcis beneath the head of the astragalus. Mr. Smith drew the attention of the meeting to the embarrassment which such a condition of the parts as that which he had just described might cause to the surgeon, during the performance of Chopart's operation. A specimen of this malformation has been delineated by Cruveilhier; it was accidentally discovered by M. Fischer, while practising the partial amputation of the foot, upon the dead subject, according to the method of Chopart.



Ossific Deposit in the false Membrane of Pericarditis.—Dr. Banks presented a heart removed from the body of a man who had died in the Hardwicke Fever Hospital, on the 27th of December, the history of whose case was as follows. A patient named Martin Meehan, æt. sixty years, was admitted into the hospital on the 4th of last December, suffering from bronchitis, and pleuro-pneumonia of an asthenic character. The case proceeded favourably for some time; the pulse became quiet, and the tongue, which had been rough, brown, and dry, began to clean. Upon the 23rd, the improvement in the condition of the patient was such, that he was allowed to get up. On going to bed, however, early in the evening, he was seized with a rigor which soon went off, but recurred upon the following day; yet his pulse was only 74, and he had neither headach nor confusion of ideas, and declared himself easy and free from suffering. On the 25th he had another rigor, his tongue again became

rough and brown, and about 12 o'clock at night he suddenly lost the power of speech, and the right leg and thigh were deprived of sensation, and the power of voluntary motion. On the 26th there was no change in his condition; he lay in a comatose state, but the pupils responded to the stimulus of light. The pulse was at this time 130; at 10 o'clock, P. M., the pupils became contracted to the size of pin holes, the pulse increased to 140, respiration became extremely laboured and loud, and he died at 7 o'clock on the morning of the 27th December.

Autopsy. Head.—The dura-mater presented a slight yellowish tinge on its outer surface. Flakes of lymph, of a light yellow colour, were seen upon the surface of each hemisphere of the brain, and in many places between the convolutions. Some lymph, and about four ounces of fluid, were discovered at the base of the brain.

Thorax.—The lungs were emphysematous, and the right costal pleura adhered so firmly to the pulmonary layer of the membrane throughout its whole extent, that the lung could not be removed without separating the pleura from the ribs. In the false membrane which united the two layers of the pleura, osseous matter had been formed. The rings of the trachea, and many of those composing the larger bronchial tubes, were found converted into bone.

The pericardium was almost everywhere closely adherent to the heart; and a large plate of bone, fully two inches square, had been formed in the false membrane, which constituted the uniting medium, and which had evidently been the result of an attack of pericarditis, many years previously to the death of the patient. The osseous plate above mentioned was upon the surface of the right ventricle. The heart was large, but pale, soft, and flabby; its muscular structure was greasy, and wherever the pericardium was not adherent, fat of a pale, unhealthy aspect had been deposited copiously upon the surface of the organ. The aorta, with the exception of a few spots of atheromatous deposit, was sound, and the lining membrane of the heart and its valves, were free from disease. This Dr. Banks considered to be a remarkable circumstance, taking into account the marked tendency which existed in this case, to the formation and deposition of osseous matter.

Dr. Banks having referred to the remarkable cases of ossification of the heart and pericardium, recorded by Mr. Robert W. Smith in the ninth volume of the *Dublin Journal*, and to the tendency to death by apoplexy in such cases, concluded by quoting the following observations, made by Mr. Smith, in the paper to which he had just referred: "A more interesting question for discussion, and one at which I can only glance, presents itself, however, on reflecting upon these cases, viz.: what is the relative influence of the auricles, the ventricles, and the arteries, upon the due performance of the circulation? Such cases as those recorded by Burns, as well as that of M'Keon, which came under my own observation, certainly tend to undervalue very much the aid which the circulation receives from the ventricles; they show that the ventricles may be ossified, hard as the skull, and rigid as stone, and yet the circulation be

carried on. The auricles pour their blood into these rigid cavities, which, being in a great measure incapable of contraction, cannot empty themselves, and the blood remains, or tends to regurgitate, until a fresh impulse from the auricles sends a portion of it into the arteries, which then carry on the circulation by their own reaction. A full consideration, however, of this interesting question, would lead far beyond the limits to which I must at present confine myself; to do it justice, it would be necessary to take a review of the circulation in the lower classes of animals, in monsters, where the heart or some of its cavities are wanting, and to consider many morbid conditions of the circulating system.

"I may, however, remark, that if the history of these cases shows, that the circulation may be carried on with ossified ventricles, it also demonstrates that the vascular actions are extremely precarious, and liable to be disturbed, or altogether stopped, by a very trivial cause; as Burns has remarked, 'the action of such a heart is unharmonious and easily deranged, it can only act efficiently while the circulation remains undisturbed.'

"The case detailed by Mr. Adams fully exemplifies the truth of this remark. Two men, each apparently about 60, had been exposed for some time to the fumes of charcoal; they were brought into Sir Patrick Dun's Hospital, in a similar state of exhaustion; their bodies were warm, but respiration had ceased for a few moments in both; by the application of the usual means, both in a short time recovered, one completely, but the other, after exhibiting signs of life for two hours, expired. On examination of his body, the viscera were found all in a natural state, except the heart, which was adherent to the pericardium and nearly encircled by a zone of bone, about three lines in thickness, and more than an inch in breadth.

"In his remarks upon this case, Mr. Adams observes, that if the three important organs, the heart, the brain, and the lungs, the 'tripod of life,' as they have been aptly denominated, be not all equally strong, at a time when animation has been accidentally suspended, the weak one cannot be roused to resume its functions. Thus, under such circumstances, what might have been supposed a simple faint has terminated in death; and I think, in the case I have just given of ossification of the pericardium, in such an altered structure was to be found the cause of death, as a man placed exactly in similar circumstances, but whose organs were sound, survived."

Disease of the Mitral Valves.—Dr. Law exhibited a heart which presented an example of contraction, to a very great degree, of the left auriculo-ventricular opening. The chief interest of the case consisted in its being one of a particular class which of late had attracted much of the attention of the Society, from their showing a necessity of retracing our steps to a certain extent, respecting the diagnosis of valvular disease of the heart; for hitherto it had been customary to believe that diseases implicating the valves of the heart were almost constantly attended with certain abnormal sounds.

Dr. Law stated that Mr. O'Ferrall, last year or the year before,

had drawn the attention of the profession to some cases that had fallen under his observation, of extensive disease of the mitral valves, where no abnormal sound could be detected during life; and it was the opinion of that gentleman, that when the auriculo-ventricular opening became narrowed to a great degree, the sounds ceased to be distinguishable. This opinion received some confirmation from another case that Dr. Law had himself brought before the Pathological Society several years since. He considered the present case worthy of attention, from the circumstance that it had been for a long while under his observation. Its history was briefly as follows. The patient, a female, presented herself for admission into Sir Patrick Dun's Hospital, not complaining of any of the symptoms of cardiac disease, but for a loss of appetite, and general derangement of the digestive system. While under his care in hospital she suffered from palpitation of the heart, but on making an examination with a view to ascertain whether any disease of that organ existed, Dr. Law could detect nothing more than a strong impulse over the cardiac region, unaccompanied by any abnormal sound whatever, either in the situation of the aortic or mitral valves. This impulse was the only circumstance that attracted his notice, until three weeks before the death of the patient, about which period she was attacked with the prevailing influenza. From this time she began to complain of very distressing palpitation, the action of the heart became tumultuous, and the patient was obliged to sit up in bed, with her body inclined forwards.

Dr. Law now entertained a suspicion that this impulse might be caused by an aneurism of the ascending aorta, for, besides the strong action of the heart, there was a prominence of the sternum, and dulness on percussion over a greater extent than usual of the cardiac region. However, these symptoms were too obscure to warrant any decided opinion. The abdomen now began to swell, the patient complained of great tenderness in the epigastric region, and from the period of this seizure she progressively sunk.

Autopsy.—Upon laying open the thorax there was discovered effusion into the cavity of each pleura, and also into that of the pericardium. The right auricle was enormously distended with blood, and thickened, and Dr. Law was of opinion that this over-distention of the right side of the heart, existing for a long period before the patient's death, had caused the peculiar prominence of the sternum, which was so observable during life. In proceeding with the examination he was led to observe that the aorta was very much contracted, and this circumstance made him suspect that he would find disease of the mitral valve, which suspicion proved to be correct. There was not only a remarkable thickening of this valve, but a contraction to an extraordinary degree of the auriculo-ventricular opening, the margin of which was lined by a fringe of lymph; and there appeared to be an interstitial deposit in the substance of the valve. The right and left auricles, and the right ventricle, were all considerably enlarged, but the left ventricle was in a state of concentric hypertrophy.

Malignant Tumour of the Leg.—Mr. Hamilton brought under the notice of the Society, the amputated limb of a female, who had been affected with a malignant tumour of the leg. The patient, aged eighteen years, and to all appearance in rude health, was admitted about six weeks since into the Whitworth Hospital, under the care of Dr. Banks, with a tumour at the upper and outer part of the leg. From her own statement it appeared, that about three months previously to her entrance into hospital she received a fall by which she sprained her knee, and that for some time after she experienced pain at the injured part. When she came into hospital the tumour was of moderate dimensions, very smooth on the surface, and remarkably elastic, so much so as closely to simulate a fluctuation. However, there was something in the feel of the tumour repugnant to the idea of its being an abscess. Mr. Hamilton was unable to satisfy himself that there was any true fluctuation perceptible. He, therefore, contented himself with ordering the insertion of a caustic issue on the surface of the tumour, so that, if it should prove to be a strumous abscess, the matter might be conducted to the surface. While the patient was undergoing this treatment the tumour gradually decreased, and from being highly elastic began to acquire a certain degree of consistence, until finally it felt under the finger like a congeries of enlarged glands. He then began to suspect that he had to deal with a malignant tumour. Accordingly he held a consultation with his colleagues on the case, and it was agreed to make a small puncture into the tumour; but upon doing so merely a little blood flowed out. Subsequently, two more punctures were made, and on both occasions a small quantity of blood mixed with serum came away. It was then evident that the disease was of a malignant character, and that there was no other remedy for it but amputation. Previously to the performance of the operation, the tumour presented the following appearances. The upper third of the leg was considerably swollen, and the tumour, which at its outer part was large, uneven, and lobulated on its surface, completely surrounded the fibula. A number of blue veins were scattered over its surface, but there was no discoloration of the integuments. The patient suffered occasionally severe pain in the leg, and an examination of the tumour after the removal of the limb afforded a satisfactory explanation of this symptom. Her general health was unaffected. On Wednesday week amputation was performed by Mr. Hamilton. The dissection of the limb disclosed the following appearances. The integuments covering the tumour were infiltrated with serum, but in other respects were healthy. The peroneal nerve passed directly across the surface of the tumour, and was in a state of tension and flattened, which circumstance, he had no doubt, was the cause of the pain from which the patient suffered so much. When the fascia was removed, the gastrocnemius and soleus muscles were found expanded over the surface of the tumour, and extremely attenuated; they also seemed to have undergone a material alteration of structure, and one of the peroneal muscles was infiltrated with malignant matter. The tumour had a cyst of its own, occupied the posterior and upper part of the

calf of the leg, in front of the soleus and gastrocnemius muscles, and extended anteriorly beyond the fibula. Upon cutting into it it was found to possess in a high degree all the anatomical characters of medullary sarcoma; indeed nothing could present a nearer resemblance to cerebral matter than certain portions of this tumour. Other parts of it were composed of extravasated blood.

The question naturally presented itself, from whence had this disease its origin? The most usual place for a malignant tumour in this situation to arise was, undoubtedly, the head of the tibia; but, in the present case, Mr. Hamilton was certain that the head of the fibula was the point where the disease commenced. The upper third nearly of this bone was entirely destroyed. It was also worthy of remark, that the symptom of pulsation which so frequently attended tumours of this description, when situated at the upper part of the leg, was absent in the present case. Mr. Hamilton here alluded to the case of a gentleman who had a tumour of this kind, whom he attended some years since, in which the pulsation was so strong, that considerable doubt was entertained by the surgeons called to consult on the case, as to whether it was a malignant tumour or an aneurism.

Mr. Hamilton remarked in conclusion, that during the progress of the present case, he was struck by observing, that a remarkable diminution took place in the size of the tumour, which was reduced by nearly one-third of its original bulk. This was a circumstance of which no satisfactory explanation could be afforded.

Foreign Substance passed from the Intestines.—Dr. Scallan detailed the particulars of a case, in which severe dysenteric symptoms were produced by the lodgment of portions of twine in the intestinal tube. About six weeks ago he was sent for to attend a young lad, whom he found labouring under great irritation of the bowels, accompanied by general febrile symptoms. The local distress increased from day to day, and the evacuations in the course of a fortnight assumed all the characters of dysenteric discharges. Blisters, &c., failed to afford any relief, and the use of strong astringents was about being commenced, when a portion of twine was observed in one of the evacuations, and subsequently, on examining another stool, a similar piece was found. It being concluded that the lodgment of these substances in the intestines had been the cause of the irritation of the bowels, all treatment was stopped, and from the time of their having been voided, not a single dysenteric symptom occurred.

It appeared upon investigation, that the patient had been in the habit of chewing portions of twine; but from the statement which he made, it was manifest that the pieces found in the evacuations must have been swallowed at least six weeks before the occurrence of the dysenteric symptoms.

(To be Continued.)

MEDICAL MISCELLANY.

A Case of Foreign Body in the Windpipe. By JOHN POPHAM, A. B., M. B.,
Physician to the Cork North Infirmary.

THE subject of the present case was a little boy, named John Casey, aged 4, who was brought to the infirmary to be treated for supposed croup. His respiration was stridulous, voice hoarse and at times almost inaudible, and cough dry and hard, occurring in paroxysms, which threatened suffocation. During the fits of coughing, the inspirations assumed a peculiar character, becoming shrill and whistling, not, however, so distinctly sonorous as in whooping-cough; the expirations were without any appreciable sound. When the paroxysm ceased, the child appeared comparatively free from distress, and the sharp sound of the inspirations became less audible, but did not quite lose the sibilant character. A circumstance which early attracted notice in the case was a want of accordance between the pectoral signs and constitutional symptoms. Thus, the child suffered very little pain, complaining chiefly of soreness at the hollow of the neck from constant coughing, the tongue was clean, the deglutition not affected, there was but little thirst or heat of skin, and the pulse ranged from 96 to 102 in the intervals of cough, being slightly intermittent; the face, however, was pale, swollen, and anxious, the head thrown back, so as to extend the larynx; the jugular veins were turgid, and the child was particularly fidgety and restless. On remarking these circumstances to the mother, she stated that on the previous day the child had been seen playing with a little ring of brass,—an eyelet or stay-eye,—which he said he had swallowed, but, from his extreme youth, she did not attach much importance to the child's assertion; she admitted, however, that the piece of brass had been sought for and could not be found. She also observed that a slight cough which the child had, became suddenly and alarmingly aggravated, accompanied by a choking sensation so urgent that she took him at once to an apothecary in the neighbourhood, who told her that the child had quinsy, and administered an emetic with temporary relief. On examination of the chest, the sound on percussion was found everywhere normal. The respiratory murmur was heard distinctly in both lungs, and was not accompanied in the early stage of the case by any rhonchus; but, though perfectly vesicular all over the lungs, yet it was not as loud as is usually heard in a child of his age. There was no perceptible difference in the respiration of the right lung, as is observed to occur when a foreign body becomes impacted in the right bronchus or its subdivisions. We could thus gather only the negative evidence that the bronchi were not directly obstructed, nor the parenchyma of the lungs inflamed. The examination of the larynx was

less conclusive. It was difficult to apply the stethoscope to the short and uneven neck of the child, and he was constantly crying and shifting his position. We could, nevertheless, collect that no evidence of a moveable body existed either upon coughing or change of posture, even on inverting the child; the distress, however, produced by this position, was so great that we did not attempt to repeat it.

The diagnosis of the above case was embarrassing. We had, on the one side, the testimony of the little patient himself that he had swallowed the piece of brass, but so far dubious, that when he was pressed further, he got frightened, and denied all knowledge of it; we had also the sudden appearance of the suffocative cough and dyspnœa, and the paroxysms of great distress, alternating with intervals of comparative ease and remission of febrile symptoms; these circumstances, taken in combination with the existing physical signs, rendered the supposition of a foreign body in the windpipe extremely probable: on the other hand, cases of croup were at the time of almost daily occurrence at the infirmary, and, in the present instance, the signs of temporary or permanent pulmonary obstruction were absent. As, however, the evidence in favour of the presence of a foreign body in the air-tubes predominated,—and the child, in such an event, incurred hourly risk of suffocation, if not relieved by an operation,—it was resolved to admit him into the hospital with the view of operating upon the first emergency. On explaining, however, to the friends the probability of the operation being required, they at once demurred, and even refused to allow the little patient into the infirmary, unless a pledge was given that no operation should be performed. Under these circumstances, nothing remained but to carry out the medical treatment, explaining to the parents the risk of failure; accordingly the trachea was freely leeches, and powders of calomel and ipecacuanha were given, with the apparent effect of improving all the symptoms, except the stridulous breathing. The cough lost much of its hard character, and its exacerbations were less frequent; the expectoration became more free, the only change in the respiration being the addition of slight bronchial murmurs. On the twenty-first day, from the date of the severe symptoms, the child—after a night of unusual dyspnœa and spasmodic cough, while sitting up in his mother's arms, where, indeed, he had continued nearly all the time of his illness, from inability to lie in bed—brought up the piece of brass by a strong expiratory effort without cough. The little patient was the first to notice its escape. Upon examination of his chest a short time after, we found the stridulous breathing and signs of oppressed circulation gone, and the vesicular respiration decidedly louder over both lungs. In a few days all traces of irritation had disappeared, and the child in the month following passed through a severe attack of measles without any untoward result.

The piece of brass proved to be, as was suspected, one of those small rings, with a grooved edge and central orifice, used by stay-



makers; it weighed three grains, and its diameter somewhat exceeded three-tenths of an inch, no doubt greater than that of a bronchus in so young a person. Hence, and from the absence of the physical signs of obstruction of the air passages of either lung, it seems almost certain that the substance was not impacted in any of the bronchi; that it was fixed seems probable, from the absence of pain and of the signs usually denoting the motion of a foreign body in the trachea; the weight of the brass and its sharp, jagged edges would also dispose to this result, but whether it was fixed in the trachea or in one of the ventricles of the larynx we can only conjecture. The central opening in the eyelet, by affording a facility for the transit of air, certainly lessened the danger which would be incurred from a solid body of equal diameter, and to this was probably owing the feeble vesicular murmur heard equally in both lungs, as if from a cause common to both. Perhaps, also, the central orifice in the brass had some connexion with the whistling sound of the inspirations noticed above, similar to that which occurred in the case recorded by Professor Macnamara in the Dublin Hospital Reports, where a distinct musical note was produced from a perforated cherry-stone impacted transversely in a boy's larynx.

It is probable that the aggravation of the symptoms upon the night previous to the expectoration of the eyelet, was occasioned by the loosening or dislodgment of it. Certainly the happy escape of a body of dimensions so disproportionate to the opening of the glottis of a child of his age, is a lesson to us not to despair when, as in the present case, an operation, though strongly urged, will not be permitted.

Case of Rupture of the Bladder. By M. H. STAPLETON, M. B., F. R. C. S. I., Surgeon to Jervis-street Hospital. Reported by Mr. R. E. Fitzgibbon.

CHARLES SCARLETT, aged twenty-two years, unmarried, by occupation a labourer, was admitted into Jervis-street Hospital on the 30th of September, 1849.

Whilst working the Panorama at the Rotunda, on Saturday evening, the 29th inst., being in a state of intoxication, he fell about the height of twelve feet from a ladder, and said that he came upon his feet. He was brought to the hospital in a car. Upon examination by the resident pupil no injury was apparent, nor did he complain of any, with the exception of a small cut on the elbow, which being dressed, he was brought home; and the persons with him were directed to bring him next day to the hospital, should he, when sober, find that he had suffered any other injury.

On Sunday, the 30th inst., he walked from his lodgings in Britain-street to the hospital. On his admission he said that he was in great agony with pain in his belly, and that he had passed no water since before the occurrence of the accident; that his stomach had been very sick during the night and morning, having a frequent incli-

nation to vomit and also to evacuate his bowels, neither of which was he able to accomplish; he also complained of great headach and thirst. His countenance was pale and anxious; the pulse quick and feeble; the extremities cold.

The catheter was now introduced, and about two ounces of dark-coloured urine mixed with blood drawn off. He was then put to bed, when, on examination, the abdomen was found tense and extremely painful on pressure. The catheter was again introduced, and a small quantity of clear urine drawn off. A laxative enema was prescribed, as his bowels had not been opened for some days previously, and also to relieve the tenesmus, which was very troublesome. It acted satisfactorily. Twelve leeches were then ordered to be applied over the region of the bladder, and the parts to be afterwards fomented: two grains of calomel and half a grain of opium to be given every third hour.

October 1st.—He was seen by Dr. Stapleton for the first time at 9, A. M. He was then sitting up in bed, with his chin almost upon his knees, complaining of intense pain in his abdomen, which prevented him from lying down. The pulse was small and scarcely to be felt, and the extremities cold and blue, although he was enveloped in blankets, and heaters had been applied to his feet. He had refused during the night to allow the application of the fomentations, as he said the pain was increased by the slightest pressure. The catheter was introduced, and a small quantity of transparent limpid urine drawn off. He stated that on getting up to the night-chair (which he had been frequently obliged to do on account of the desire he felt to go to stool), he each time passed water. Leeches were again ordered to be applied over the region of the bladder, and after their removal the abdomen to be covered with a warm poultice. He was to take a grain of calomel and a grain of opium every second hour.

October 2nd.—He was now troubled with diarrhœa. The calomel was omitted, and a grain of opium given every second hour, the abdomen fomented with warm water and turpentine, and the poultice re-applied after each fomentation.

In the evening he was under the influence of the opium, and was able to lie down and stretch out his legs. The opium to be continued according to the effects produced.

October 3rd.—Diarrhœa and tenesmus still urgent. Starch and opium injections were prescribed.

In the evening the diarrhœa and tenesmus still continued unabated; he could allow pressure on the abdomen, and, although in a drowsy state, complained of want of sleep. Acetate of lead and opium injections were now ordered.

October 4th.—Diarrhœa and tenesmus still unabated, and the abdomen enlarging. Complains greatly of want of sleep, and begs to have opium pills, which were given every second hour.

In the evening hiccough had been added to the other symptoms, and the pulse could not be felt in one arm. He was still able to get

up to the night-chair (obstinately refusing any assistance in bed). A blister to the epigastric region was ordered, and a mixture of camphor and sulphuric ether given occasionally.

October 5th.—Is evidently sinking rapidly, although he speaks with a firm voice and is able to get out of bed without assistance. The pulse has failed at the wrist.

The catheter was introduced at intervals, and scarcely an ounce ever came away at one time.

He died at about 3 o'clock, P. M.

The body, when examined on the morning of the 6th, presented the following appearances. The abdomen was tumid, but no sign of ecchymosis was apparent. On opening the cavity of the peritoneum a large quantity of fluid escaped. The intestines were not much distended, but were preternaturally vascular. There were a few very slight adhesions, but no glueing together of the intestines. The liver was nodulated, and presented several old adhesions on its anterior surface; the omentum was very vascular, and lay in a shrivelled mass across the upper part of the abdomen, presenting no appearance of lymph on either surface. The intestines were easily turned out (there being but few and very slight adhesions) from the pelvic cavity, which contained about a pint of a turbid fluid, having a strong ammoniacal odour.

The fluid being removed, the peritoneum was found coated thickly with lymph. The bladder did not extend above the pubis. An elastic catheter having been introduced through the urethra, air blown into the bladder was found to escape, bubble by bubble, from its upper and posterior part. The lymph being removed a transverse but rather oblique rent was found in the peritoneum of about three quarters of an inch in length, that in the bladder being of greater extent; its edges were jagged, thickened, and extremely vascular. There was no discoloration of the peritoneum in the neighbourhood of the rectum, but, on examination, the surrounding areolar substance was much inflamed.

From the appearances on dissection it was evident that nature had gone far in this case towards the accomplishment of a cure of the ruptured bladder; and I am inclined to think that had the man in the first instance drawn attention to the injury received he might have recovered. In similar cases I would be disposed to rely more upon the opiate treatment, in combination with leeching or general blood-letting, than upon the use of mercurials. I would not recommend a catheter to be left in the bladder, but would have it introduced at proper intervals, and not farther than was absolutely necessary just to enter the bladder. It should be also borne in mind that there is but little secretion of urine in acute peritonitis, and, in addition, the constant tenesmus which is always present, and might almost be said to be pathognomonic of this accident, induces the patient frequently to empty the bladder, although ruptured. In the ninth volume of the first series of this Journal there is a very able and valuable paper by Professor Harri-

son on rupture of the bladder, in which he advises tapping of the pelvic *cul de sac* through the rectum. This operation, recommended by so high an authority, has been, as far as I am aware, never yet tried, nor would I wish to give a decided opinion against it, yet I cannot avoid remarking that the effects of the accident are, in its first moments, insidious, and have proceeded to a destructive extent internally before its nature is suspected by the sufferer. Moreover the operation is not recommended by the learned professor "till the *cul de sac* is distended with fluid, coated with lymph, and well protruded towards the rectum." When such is the state of the patient I fear the operation will not be followed by the happy result he expects.

Case of Communication between the Rectum, Bladder, and left Ovary; Calculus of the left Kidney; great Enlargement of the Liver; with lateral Curvature of the Spine. By T. P. HESLOP, M. D., Resident Medical Officer to the General Hospital, Birmingham.

CATHERINE EVERALL, aged 37, married, was admitted into the General Hospital, Birmingham, on the 22nd of June, 1849, under the care of Dr. Johnstone; an extremely emaciated woman, with a countenance indicative of intense suffering. She had been a patient twelve months previously in the hospital, and found so much relief that she insisted upon being brought again, though it was obviously only to die. At the former period she complained of extreme pain in the left lumbar region, and passed a large quantity of purulent urine. This latter symptom appears to have existed for several months previously. About the time of her last admission the menses disappeared, and never since recurred. Many years before, two stones were extracted from the bladder at the Shrewsbury Hospital, of which I have been unable to learn more than that they were smooth, round, and of great beauty, insomuch that they were kept for a long time as interesting curiosities by the friends of the patient. When in the hospital she appeared to labour under such marked symptoms referable to the bladder, that Dr. Johnstone directed it to be sounded, but no calculus was detected. Up to the period of her present application to the hospital, she has had great difficulty in passing urine, and endured severe pain until she succeeded. Her husband informed me that she averred she had passed air from the bladder for at least twelve months, and that it was her opinion that the air prevented the evacuation of its contents, and this expulsion of air always produced marked relief. She appears to have had the belief that the urinary and fecal passages communicated, and was never able to account for the curious odour and appearance of the discharges from the urethra. She told her husband that her spine began to yield at the age of 14, which she attributed to over-exertion in carrying her younger brothers and sisters. She never had children, and has never had an attack of jaundice.

She suffered such extreme exhaustion from her journey (a dis-

tance of fourteen miles), that it was found impossible to make a very accurate examination of her condition. She was ordered good diet, wine, and quina with sulphuric acid. On the evening of the 25th she had an exacerbation of pain; the countenance assumed the Hippocratic character; while the strength was evidently failing fast. The pain was exclusively confined to the left posterior lumbar region, and coursed down the left iliac to the hypogastric region. These portions of the abdomen were exquisitely tender to the touch. There was a clear sound on percussion over the last-named regions, but the lumbar region was perfectly dull; here there was distinct evidence of fulness also, but somewhat undefined. The right half of the abdomen was tense and absolutely dull on percussion, extending from the ribs nearly to the crest of the ileum. The limits of this, the hepatic tumour, were easily definable both by touch and percussion. The wine was increased, but she sank during the night. She passed purulent urine up to the time of her death.

Autopsy.—Head not examined.

Thorax.—Nothing worthy of note was observable in the lungs and heart. The right pleural cavity was diminished to a remarkable degree by curvature of the spine, commencing at the dorsal vertebrae, its greatest convexity ending at the base of the thorax. The lumbar portion of the spine presented curvature, to a less degree, to the other side.

Abdomen.—On opening the abdomen the liver was seen to occupy its entire right half, sweeping below the umbilicus to the right posterior lumbar region; its posterior border deeply notched by the spine; its inferior surface strongly marked by the kidney and colon. Its consistence was much firmer than natural; it felt almost dry, and cut like brawn, its general aspect being that of a *waxy* liver, with solid fat deposit. The left kidney was fully one-half larger than its natural size. On being carefully cut open, small abscesses were found throughout its substance; and several ounces of pus came from the immensely dilated pelvis. The infundibula were loaded with calculi, accurately moulded to their form; some of these reached the calyces. The head of the ureter partook of the dilatation of the other renal passages, and was occupied by a calculus as large as a walnut, so closely impacted, that it was only after some manipulation a probe was made to pass into the pelvis of the organ. The ureter below this point was not dilated to a marked degree. On proceeding to examine the pelvic organs, a tumour about the size of an ordinary orange was seen occupying the position of the left ovary. The adhesions between this body, the rectum, and bladder, were so intimate, that all these organs were taken out together and carefully dissected. Upon opening the bladder, which was of moderate dimensions, considering the age and sex, a minute hole was noticed in the left angle of its superior fundus. The mucous membrane around was minutely granular and stained of a dark slate colour; a probe was found to pass with the greatest facility from this point into the

head of the rectum, which strongly adhered to the upper back part of the bladder. The tumour mentioned was found to be the left ovary enlarged; externally its *colour* was bright brown, its consistency obviously less than *small* ovarian tumours in general. A soft, pultaceous, half-fæcal, half-caseous-looking matter was contained within it, which was found to communicate with the rectum, or, more correctly, with the lower anterior portion of the sigmoid flexure of the colon, adherent to the tumour. This communication was evidently out of the direct course of the intestinal contents, from the presence of bands and folds in the cavity of the gut, both below and above the opening of communication. The finger *could* be passed along the bowel without passing into the abnormal communication, and *vice versâ*. The recto-ovarian did not correspond exactly with the recto-vesical opening, the latter being a little lower in the pelvis, but all were matted together. The remaining abdominal and pelvic viscera were healthy.

The morbid appearances found in the pelvis in this case are, as far as I know, unique. It is difficult to understand how this poor woman sustained life so long with such an amount of disease going on in the abdomen. Nor is it by any means easy to give a decided opinion as to the nature of the ovarian tumour. There was no evidence of tubercle or cancer, the two most common causes of abnormal communications between the various organs of the body. Perhaps the only explanation that can be offered is, that a slow process of inflammation had been for a long time silently throwing out its characteristic exudations, and gradually glueing together those organs lying nearest to the great permanent lesion of the left kidney, by a *selection* too obvious to require further mention; upon the adhesion followed the ulcerative process, and so ensued the remarkable appearances discovered after death. It is impossible to imagine that the communication between the ovary and rectum could have existed long; for although, from the peculiar anatomical character of the former, the cavities of these organs did not communicate *freely*, and the existence of a great pus-discharge from a neighbouring organ might have tended to check it, irritation must have been produced in no long time after the connexion, sufficient to cause ovarian sup-puration, with pelvic abscess.

It will be observed that the account of the woman passing air, if not fæces, from the bladder, was obtained after her death from her husband. We must take such observations with caution, although these inquiries were made with scrupulous care; and in further proof of the correctness of his answers, I may add, that the poor woman had frequently attempted to describe her sensations and notions to her medical attendants, who treated them with incredulity.

Cases of Abscess behind the Pharynx. By CHRISTOPHER FLEMING, M. D., F. R. C. S. I. Surgeon to the Netterville Hospital, &c.

IN the seventeenth volume of the first series of this Journal, I made a communication on the subject of a peculiar affection of the throat arising from abscess behind the pharynx, and occurring at different periods of life. The presence of this affection in the child, especially in infancy, is often difficult of detection from its extreme rarity, and requires much accuracy in diagnosis. The following cases may hence possess some practical value.

Case I.—Francis Kelly, aged two months, was observed by his mother, a few days before her application to me at the Netterville Hospital(a), to have a peculiar snuffle in his breathing, some difficulty in deglutition, and occasional attacks of dyspnœa of variable duration. In all other respects, the child was, and had been from birth, in excellent health. He was a well-thriven child, and his only nourishment was the breast. The “epidemic influenza” being then prevalent amongst the children of the poor, I considered these symptoms as premonitory of an attack of it, and directed my treatment accordingly, but the child did not improve. On the contrary, the symptoms above noted gradually increased in intensity, and severe fever was superadded. The child from day to day was intolerably restless; he could only suck for a moment or so, spasmodically snapping the breast in his mouth, when a violent paroxysm of dyspnœa would force him equally abruptly to drop it. In one of these paroxysms he was seized with a fit of convulsions, on about the eighth day from the date of his illness. This occurred about the middle of last month.

The features of the case now assumed a most alarming aspect, and a convulsive fit appeared to be momentarily threatened. The child lay in a semi-lethargic state, with the countenance full and bloated, and the features constantly undergoing changes from repeated muscular twitchings. The eye-lids were half closed, and the eye-balls protruding. The tongue, in perpetual movement, projected beyond the teeth and lips, as if too large for the mouth, a position which the mother remarked it retained within the last few days, during the casual slumbers of the child. In addition, the snuffle-breathing was most intense, accompanied by a loud gurgling noise in the fauces, and the dyspnœa and dysphagia were equally urgent. All symptoms were aggravated by attempting to put the child to the breast. From the cries of the child, it was obvious the larynx was unaffected, and no physical indication of any thoracic lesion could be detected. Under all these circumstances, I directed my attention to the pharynx; the examination produced a most violent paroxysm of dyspnœa, during which the child was seized with a slight convulsive fit. I satisfied myself that an abscess existed there, and bringing to my recollection the fact I had recorded in my former com-

(a) Mr. Torney, the resident medical officer at the institution, witnessed the progress of this case throughout.

munication, that a spontaneous discharge through the nose had taken place in the case of a child aged seven months, then reported, it occurred to me that I might, under the circumstances of this case, artificially imitate nature. I took my opportunity, and, rapidly passing my finger, pressed it with force against the abscess: purulent matter darted through the anterior nares. Afterwards the child appeared to suck with less uneasiness, and the respiration was improved. From day to day a variable amount of discharge took place from the nose, accompanied by very trifling alleviation in the prominent symptoms. The child, however, was able to take more nourishment, and the act of sucking was less distressing. About this time Mr. Colles and Mr. Wilmot saw the case, when the characteristic features of the abscess were still well marked. I was obliged more than once to make forcible pressure against it with my finger, to keep the opening free, and had yet doubts whether I should not make an opening through the mouth. With this view I consulted Sir Philip Crampton, being anxious as well for his opinion, as that he should see a case of the kind in so very young a subject. In his examination of the fauces so violent a fit of convulsions supervened, that he recommended me to rest satisfied with the opening already made, as he observed the purulent discharge from the nose then present, and as, from the very limited capacity of the mouth of the child, and its great sensibility, risk might attend further interference. I acted on his suggestions, gave the child mild stimulants and nutriment, and enjoined that position whereby the matter could get free egress, as in the former case. The child is rapidly improving in health, and has lost all the alarming symptoms which existed. The snuffle-breathing has not as yet completely disappeared, but the respiration and deglutition are natural. The child can suck continuously, and is getting fat.

CASE II.—In July last, a young girl aged eleven years was brought to my friend, Dr. Montgomery, complaining of uneasy sensations about the throat and neck, which were to be dated to the latter end of the preceding April, and were not referable to any special cause. These sensations commenced with what is commonly termed a crick or stiffness in the back of the neck, and continued with variable intensity, causing more or less uneasiness, and often extreme pain in the ears. The movements of the head and neck were extremely limited, and necessarily measured with great caution to render them tolerable. The girl was delicate-looking, of strumous aspect and strumous constitution. Having had enlarged tonsils, and complaining of difficulty in swallowing, Dr. Montgomery's attention was early directed to the throat, where, after the lapse of six or eight weeks, a train of symptoms developed themselves, which led him to the conviction that an abscess was about forming at the back of the pharynx. Under these circumstances I saw the child, and I found all the symptoms to indicate its presence. The countenance was peculiarly expressive, the voice nasal and muffled, and the movements of the head and neck very remarkable. The latter particularly

brought to my recollection similar movements attendant on disease of the cervical portion of the spine. The muscles at the back of the neck were in a semi-rigid state, the sterno-mastoid equally so; and in speaking, the action of the labial and nasal muscles gave a sort of tetanic cast to the countenance. The jaws were separable, but limitedly so, admitting a finger to pass between them. The tongue was easily protruded, but yet with a sort of spasmodic jerk. The head was almost fixedly retained in the horizontal position, the lower jaw at the same time projecting forwards, as if to accommodate the pharynx in its functions. The elevation of the head or its lateral movement was wholly impracticable, and from the manner in which they were performed, gave a very peculiar stamp to the countenance. On stripping the thorax, a lateral curvature of the spine was visible; there was also extreme tenderness on pressure over the spinous processes of the cervical vertebræ, particularly their central portions. There were yet no other symptoms indicative of caries of the spine; there were no shooting pains along the arms, nor about the lateral portions of the head. In fact there was, latterly, rather a disposition to alleviation than aggravation of the original symptoms. The local characters of the abscess were most marked; there was a general blush of the fauces, and immediately behind the soft palate, when the tongue was much depressed and at the same time not allowed to protrude, a passing glance caught the pharynx bulging forwards in the median line, where, pressure being made with the finger, most unequivocal fluctuation could be felt through a tense, elastic, membranous wall. The boundary of the abscess above could be measured by the finger with ease, but below it was gradually bevelled off, the sensation of fluctuation being communicated throughout. Dr. Montgomery's opinion being confirmed, the opening of the abscess was decided on, and effected by an ordinary sharp-pointed bistoury, protected to about half an inch from the point. In proceeding to open it, I depressed the tongue well with the fore-finger of the left hand, and endeavoured to cloak the glottis on the escape of the pus. The opening was accomplished with ease, and was made in a *transverse* direction; a large gush of matter darted forwards, so as to fill the depressed cavity of the tongue, and more escaped by pressure from below with the finger passed into the mouth. The child expressed herself much relieved, and her attendant remarked she was able to raise up her head. I fancied also that its lateral movements were effected with more ease. On the ninth day after the opening of the abscess, I again saw this little girl; she expressed herself as being much better; the varied movements of the head and neck, though yet imperfect, were much improved. On examining the throat, the site of the opening presented an ulcerated margin; it was exactly in the median line, and could be seen without much difficulty. On introducing the finger into the pharynx, much fulness was discernible, and I could discover that this extended a good way below the level of the opening. I satisfied myself no matter was lodged in the abscess; its anterior

wall appeared as if detached from the spine, and it occurred to me that air might have kept it so. Syrup of the iodide of iron was directed, tepid salt-water bathing recommended, and every attention to improve the general health enjoined; Dr. Montgomery and I coinciding in the opinion, that in this case it was to be apprehended some lesion of the vertebræ existed.

January, 1850. I have heard from Dr. Montgomery, that the child has recovered from all previous symptoms, with the exception of a certain limited and studied movement of the head, and that the general health is perfectly restored.

The details of the above cases are given so much at length, that it is almost unnecessary to add any remarks. The second case requires none. The age of the child, and the chronic character of the abscess, with the other attendant local symptoms, assisted in removing any difficulties which might otherwise arise, and no hurried measures were called for, on the part of the surgeon. Its favourable termination, notwithstanding the more than probable connexion of the abscess with spinal disease, is, perhaps, its most remarkable feature. Not so, the first case; there, the tender age of the patient, the extreme acuteness and urgency of the symptoms, necessarily equivocal in their nature, and their purely local cause, tended most materially to obscure the diagnosis. I have recorded a case somewhat doubtful, at the age of four weeks, but I have never before met with one, so unequivocal in its nature, at a younger period than four or six months. I have brought these cases forward at present, even at the risk of repetition, from the conviction of their importance in the catalogue of diseases to which children are liable, and from the impression on my mind, that such affections of the throat too often escape observation; hence many children must fall victims to them, and many are subjected to treatment, if not inimical to, certainly wholly unfitted for their relief: treatment, from the nature of the attendant symptoms, necessarily active and severe. To my former communication on this subject I have little to add; the cases now reported are but a confirmation of the statements then made.

Cases of dry Gangrene. By SAMUEL G. WILMOT, M. D., one of the Surgeons to Dr. Stevens' Hospital.

Case of dry Gangrene from Arteritis.—Anne Kearney, aged 19, a pale, delicate-looking girl, of slender make, was admitted into Stevens' Hospital with "dry gangrene" of some of the toes of the left foot.

The last phalanx of the great toe is perfectly black, dry, cold, and shrivelled, evidently devoid of all vitality, and a portion of the mortification extends along the inner side of the proximal phalanx as far as the metatarso-phalangeal articulation. The last phalanx of the second and third toes is also in the same condition. The gangrenous parts are limited by an abrupt, elevated line, but the

disjunctive process has not taken place, nor is its intended commencement as yet announced by the ordinary red line. No fetor whatever can be observed to arise from the dead parts. None of the arteries can be felt to pulsate in the affected limb, the femoral artery from Poupart's ligament to the point where it perforates the tendon of the adductor muscles appears to be completely obliterated into a firm cord: the pulsations of the iliac artery can, however, be distinctly detected. There is extreme tenderness on pressure along the course of the tibial and peroneal arteries, which is not observed elsewhere.

The tibials and peroneals are not discoverable in the right foot either; the popliteal can be scarcely perceived, but the pulsations of the femoral are distinct. The patient complains of severe pain in the left foot; she says it is constant, but becomes so much aggravated at periods, especially at about two o'clock in the day, as almost to defy endurance. At night the pain undergoes another exacerbation which is minor in degree, but sufficient to deprive her of sleep.

Pulse 140; very small and contracted; skin dry and harsh; tongue dry; bowels regular. There is no cough; no stethoscopic indication of cardiac lesion, nor evidence of other disease; catamenia always regular prior to the occurrence of her present malady.

She has always enjoyed good health until now, and was never the subject of fever nor any other complaint except a simple cold. She has latterly been occupied in a dairy, and attending on cows, by which she was necessarily exposed to wet feet. Her diet has been for the most part good, but latterly not so much so, as it consisted almost entirely of tea, bread, and oatmeal stirabout. She is not aware that there was any disease in the meal, and does not know of any one in the neighbourhood having been affected similarly to herself. Does not recollect having received a hurt which might have been the immediate origin of the disease.

She states that nine weeks ago she was suddenly seized with intense pain in the ball of the great toe. It was of a burning character, and shot upwards along the limb; it was preceded for a few days by an unusual amount of coldness in both feet, but particularly in the left, the one now affected. After the lapse of two days the pain became somewhat mitigated, and she now perceived a small purple vesication on the inner side of the ball of great toe; she raised the cuticle by means of a needle, and thus a black spot was revealed. Beyond this part of the history of her case she cannot proceed with accuracy. The mortification, she says, spread rapidly; and when it had involved the last phalanx it was observed on the second and third toes, taking a similar course to that already described.

Ordered leeches along the course of the tibial artery of the left foot; fomentations of belladonna leaves, carbonate of ammonia internally, and a full opiate at night.

About a month after her admission the line of separation was

established, but had only advanced to a very small extent. She still suffered severe pain at night, and the paroxysms of pain which occurred daily about two o'clock were so urgent as to demand the exhibition of a powerful opiate. Her pulse still continued rapid; skin dry; great debility. Sulphate of quina was now substituted for the carbonate of ammonia, and some wine was ordered. The opium at night to be combined with an antimonial. Camphorated spirits to be applied warm to the gangrenous parts; and a few more leeches along the tibial artery, also over the femoral, a little below Poupart's ligament, where there was pain on pressure.

In the course of somewhat more than three weeks I removed the great toe, which had been separated at the joint by a natural process, with the exception of some tendinous and ligamentous bands. The ulcerative process had advanced as far as the bone on the other two toes. After the lapse of a fortnight more the gangrened point of the second toe had separated, and the part was healed. She still suffered pain, but it was much less intense, and the exacerbations in particular were rendered milder. Upon the whole she was decidedly improved. The temperature of both limbs was now measured by the thermometer, and the following is the comparison between them. Between the third and fourth toes of the left (mortified) foot, 84° F.; between same of the right, 86° . In the pudendum on left side, 92° ; in right, 95° ; temperature under tongue being $96\frac{1}{2}^{\circ}$. In ten days' time the mortified part of the third toe was detached as far as the bone; through this I sawed, and in a very short time it healed completely. After the separation, however, of all the dead parts, some pain still continued, maintaining its character of being aggravated at periods. Since the occurrence of the disease her catamenia were totally absent. She was now anxious to return home, and accordingly left hospital. She was ordered to take with her some aromatic iron mixture and pills of opium, which were to be used at night if necessary. Both feet were encased in carded wool.

Case of dry Gangrene from arterial Ossification.—Thomas Fitzsimons, aged 50, a pensioner, with a peculiar countenance indicative of present suffering and past hardship, rather emaciated, and looking much older than he states, was admitted into Steevens' Hospital on the 9th October, 1847.

The entire of the middle toe of the left foot presents a purple colour, and on each side, where it lies in contact with the adjoining toes, the cuticle is slightly raised, and the cutis itself is nearly black; the toe is perfectly cold, and is fast losing all vitality. The patient complains of pain of a dead, aching character, which he refers to the anterior part of the dorsum of the foot and across the metatarso-phalangeal joints. From the base of the affected toe a blush of inflammation extends for about two inches and a half upwards on the dorsum of the foot. The tibial and peroneal arteries cannot be felt, and the popliteal seems to be obliterated; a hard, round, cord alone indicates the situation of the vessel. The femoral can with care be traced,

but its pulsations are very feeble, and its parietes feel quite unyielding. The main artery of the opposite limb presents much the same character, but the popliteal in it can be perceived; the arteries about the ankle are, however, pulseless, as in the left. The pulse at the wrist is 80, soft and feeble; the heart's action is weak, and its sounds indistinct, but there is no auscultatory indication of valvular lesion. The patient complains of coldness of the feet at times. The temperature between the toes of the left (affected) foot is 88° F.; between those of the right, 93°; temperature under tongue being 98°.

He states that he served in the British army in India for twenty-two years, during which period he led a regular life, indulging but moderately in eating and drinking. His food was generally fresh meat and bread; his drink brandy, gin, and beer. He enjoyed good health while in India, never having had any disease except occasionally the hepatic and intestinal derangements so common in that country. In 1839 he returned to Ireland, where he has continued ever since. For some months previously to the appearance of his disease, his health and strength began to fail, and he was seized with diarrhœa, which was only kept in abeyance, not cured, by powerful astringents. He was also inconvenienced by constant coldness of the feet, with occasional numbness and sense of pricking, especially in the left foot. In this state he was obliged to perform a long journey on foot. On the day following he was annoyed by what he termed "a cramp" along the front of the left leg and thigh, succeeded by a feeling of excessive coldness and numbness of the foot. In the evening this sensation was replaced by that of a burning heat, especially upon laying the foot upon the ground. Upon rising the next morning he observed a small red spot on which a minute vesication had risen on the inner and under side of the middle toe of the left foot. In about three or four days after this period he was admitted into the hospital. Ordered one grain of watery extract of opium three times daily. The affected foot to be enveloped in carded wool.

October 13th.—Since his admission the cuticle of the toe has been entirely elevated by the effusion under it of a dark brown fluid, and the inflammatory blush on the dorsum of the foot has extended. He suffers severe pain, particularly at night. Three grains of carbonate of ammonia to be added to the extract of opium, and these pills to be taken three times daily. The toe and foot to be frequently fomented with decoction of poppies and camphorated spirits: one ounce of the latter to a pint of the former. He was also ordered wine.

20th.—The toe has now become quite black, dry, hard, and shrivelled, and over the metatarso-phalangeal joint the red line preparatory to the act of separation is distinctly perceptible.

27th.—A narrow line of ulceration has taken place through the skin, exactly at the situation the red line occupied. The dead part feels like a piece of pasteboard. He still complains of pain. Ordered

eight ounces of the carbonate of ammonia mixture and two scruples of black-drop, of which one ounce is to be taken three times in the day; the pills to be omitted. At this period the temperature of the foot was ascertained, and was found to be two degrees higher than upon the patient's admission.

November 10th.—The ulceration is now complete as far as the bone, which was cut through with a forceps. He has improved somewhat in appearance; he still, however, complains of pain, also of a cold, numb sensation which frequently seizes both feet.

27th.—The mortification extended a little beyond the point at which the bone was cut, and passed through the joint, separating the small piece of bone that had remained. All the dead parts are now detached, and the granulations which sprung up are in process of cicatrization.

December 1st.—He left hospital to-day. The parts are all healed; his health is much improved, but he still experiences pain and the cold sensation already described. The foot was closely rolled in carded wool.

The preceding cases furnish two instances of that peculiar and interesting form of mortification termed "dry gangrene," the pathology of which has from time to time afforded ground for much theorizing and speculation. Both cases acknowledge the same immediate cause,—deficiency in the supply of blood,—either from partial obliteration of the arteries or from diminution in their caliber; but remotely they are produced by very different morbid conditions.

In the first the mortification was evidently due to arteritis; the age of the patient, the tenderness along the tibial and peroneal arteries, as well as over a portion of the femoral, the feverish state of the system, which was so much disproportioned to the mere outward signs of disease, the fact of the origin of the disease being traceable to the local application of cold, are circumstances which point with unequivocal certainty to the existence of inflammation. In the second case the state of the vessels is rather to be presumed; still, from the advanced age of the individual, from the frequent and well-known presence of ossification in the arteries at that period of life, together with the feel communicated by the femoral artery, not alone of the left limb, but of the right also, we are authorized, I think, in attributing the mortification to an ossified condition of some of the arteries, if not of all. Now the recognition of these two distinct states of the arteries, as causes of dry gangrene, is not interesting merely in a pathological point of view, but is most important in practice, since the treatment of the two cases manifestly differs. Where arteritis is the cause, we must in the early stage employ antiphlogistic measures, enjoin the most perfect quietude in the horizontal posture, and oblige the patient to renounce every article of diet that is in the least degree stimulating. In the case above recited the general condition of the patient forbade rigorous antiphlo-

gistic remedies; besides, when she came under treatment the disease was rather subacute. In those cases, on the contrary, in which the disease owes its origin to ossification, reason, ratified by experience, directs us to adopt a plan precisely different. In the former case the cause of arterial obstruction is to be ascribed to the effusion of lymph—the product of inflammation, and the coagulation of the blood within the vessel; our object, therefore, should be to check as much as possible the effusion of this lymph, and to moderate its amount. In the latter case the deficiency of blood being the result of an ossified state of the arterial parietes, which renders them inelastic, diminishes their caliber, and in some instances completely obliterates them, the indication is to determine blood to the part, and this is to be accomplished by the administration of stimulants and tonics,—remedies which augment the vigour of the heart,—and locally by maintaining a uniform amount of heat. I am, however, aware that so high an authority as Professor Syne of Edinburgh condemns the stimulating plan of treatment in *gangrena senilis*, upon the ground “that there is a combination of weakness and over-action in the affected part,” and that we should avoid exalting the latter in the least degree.

No doubt, in all cases except in those where the obstruction is complete, and is effected suddenly (which occurs seldom, if ever, unless as the result of arteritis), more or less increased vascular action precedes the mortification; and in many instances a slight degree of inflammation, arising from various exciting causes, which under other circumstances would be inoperative, is the forerunner of the death of the part. But, in fact, this “over-action” proves too much for the part, simply because of the want of a due supply of blood, it being from this circumstance low in vitality; just as we find in numerous other instances, parts in which the vitality is much beneath the standard of health, unable to support the smallest degree of inflammatory action without terminating in death. It is clear then that to exalt the vigour of the parts, and to promote nutrition therein, by encouraging the circulation of the blood, which every advance of the disease in the vessels tends to cut off,—in short, to make amends as much as possible for the effect to which the “*fons et origo mali*” necessarily lead,—are the rational indications in the treatment of senile gangrene. We thus endeavour directly to counteract the cause of the disease instead of soothing its effect, a plan more scientific if not more practical; for it is evident that could we by artificial means raise the vitality of the parts to that of the natural standard, by affording the ordinary supply of blood, mortification would be prevented, and that on the eve of occurrence might probably be anticipated. We see then that in this disease, as in many others, two cases identical in nature are diametrically opposite as regards the particulars of treatment, merely from a difference in their remote causes.

Notices of rare Cases in Midwifery Practice. By C. D. PURDON, M. B.,
F. R. C. S. I., Belfast.

1. *Hydrometra*.—A young lady, aged 18, of lymphatic temperament, middle size, chest well developed, breasts without any areola, abdomen very large, states that about nine months previously the catamenia ceased, after great mental agitation, and in some weeks she began to have regular attacks of morning sickness, and after a short time perceived her abdomen to be enlarged; from this she went on increasing in size regularly until the ninth month, when she appeared in the last stage of utero-gestation. The os uteri was now quite small and virgin-like, cervix long and thin, the uterus appearing much depressed; she had slight œdema of the feet. At this time she suffered from an attack of enteritis, which yielded to the usual remedies; in some days after, she had a slight bloody discharge from the vagina, which soon ceased of its own accord. She then had regular paroxysms of apparent labour pains for three consecutive nights, being well during the day, when a yellowish coloured serous discharge began to issue from the uterus, and continued for four weeks, the abdomen falling gradually each day, till at length it attained its usual shape and form. In a few weeks she had a regular catamenial discharge. She is now perfectly recovered.

2. *Vicarious Lochial Discharge*.—Attended Mrs. — of her seventh child. The labour natural, and everything went on well till the eighth day, when I was informed by the nursetender that the lochia had entirely ceased, and that there was a reddish-coloured discharge from the rectum. Her pulse at this time was only 72, there was no pain on pressure, and she had not the slightest fever. By using appropriate means, the lochia, after forty-eight hours, returned to their usual channel.

3. *Labour without any Pain in the second Stage*.—Mrs. —, aged 21, was taken ill of her first child, at seven in the morning, and had frequent dilating pains for about three hours; these ceased on the rupture of the membranes, and she appeared to be free from all pain, when she suddenly said that there was something pressing down, and on going to examine, I found the head pressing on the perineum. The head advanced rapidly with each uterine contraction. She lay quite still, with eyes half closed, till the child was expelled, without any sensation of bearing down, or expressing that she felt any pain.

SELECTIONS FROM BRITISH AND FOREIGN PERIODICALS.

On Gastrotomy. By PROFESSOR SÉDILLOT.

PROFESSOR SÉDILLOT, of Strasbourg, has already laid before the Academy of Sciences many memoirs on the subject of gastrotomy, with the intention of demonstrating the facility of curing wounds of the stomach, the little danger arising from fistulæ of that viscus, the possibility of maintaining life by artificial alimentation, by means of œsophagean tubes; and, finally, the ease with which, in animals, we succeed in not only maintaining life, but also their condition, after gastrotomy has been performed, by food supplied through the fistulous opening into the stomach. On the 19th of November he read the following Report on the results of gastrotomy, which he had performed upon a man aged fifty-two years, affected with narrowing of the œsophagus to such a degree that nourishment could only be supplied by means of fluids, and which were often almost immediately rejected, mixed with saliva and mucus. Catheterism of the œsophagus was thrice attempted, without success. Emaciation was extreme, and the patient had lost 120 pounds weight within the year. Under such circumstances M. Sédillot thought it advisable to perform gastrotomy. The patient was put under the influence of chloroform; a crucial incision, of about an inch and a half in diameter, was made in front of the rectus muscle, and about two inches below and to the outer side of the xiphoid cartilage. The tegumentary flaps having been thrown back, he divided successively the aponeurosis covering the rectus, the muscle itself, the aponeurosis situated between it and the peritoneum, and, finally, the peritoneum first raising it with the forceps. A blunt hook being then introduced, a small portion of epiploon was drawn out, afterwards the transverse arch of the colon, and with it the stomach. But having experienced much resistance, he returned the great intestine with the epiploon, retaining the superficial layers of the latter; he then separated them in the abdomen, and gradually drew through the wound a portion of the greater curvature of the stomach. The epiploon being then returned, a puncture was made in that part of the stomach which appeared to be its anterior surface, and at the junction of the pyloric and cardiac extremities. A canula was now introduced into the stomach through this opening. This canula was composed of two semicylindrical portions, forming, when joined, a perfect tube. Each of these portions had projecting borders, bent at right angles; the one to support the stomach against the walls of the abdomen, and the other to maintain the instrument in the exterior wound. Tubes of silver, of different diameters, could be introduced between the two divisions of the tube, so as to separate them more or less if requisite, to allow of their being cleaned, and to permit, when the adhesions of the

stomach should be formed, the removal of the entire of the instrument for a short time or altogether, according to the indications. When the stomach was punctured, M. Sédillot introduced two directors at the opposite edges of the wound, and upon the grooves of these he passed, one after the other, the two pieces of the canula; then a tube, stopped by a cork, was placed between the two, to keep them separated. The different parts of the instrument were secured by means of buttons arranged for that purpose, and the stomach was returned into the abdomen.

The entire length of the canula, about two inches, was then within the abdominal parietes, and was kept in its place by means of tapes, which passed through the eyes in the instrument, and were fastened round the body. The operation lasted an hour. During its performance the patient was kept in a state of insensibility. The rest of the day was passed calmly; *eau sucrée* and about eight ounces of chicken broth were at intervals injected through a gum elastic tube into the stomach, with a tin syringe. On the removal of the cork, the stomach was sometimes found distended with a greenish bile, at other times it appeared empty. All the injected fluid accumulated in the cardiac portion, and showed no tendency to escape outwardly. At nine o'clock in the evening, eleven hours after the operation, the patient was quiet and made no complaint. He slept during the night, but towards four in the morning he awoke suddenly; two hours afterwards he was attacked with paroxysms of dyspnœa and suffocation. The respiration became laborious and quick. He died quietly one and twenty hours after the operation. On examination of the body there was no trace of peritonitis, with the exception of some lenticular spots of effused blood around the wound in the epiploon, and the effusion of a few drachms of reddish serum into the left hypochondrium.

The canula had entered the walls of the stomach, on its anterior surface, about three inches and a half from the pylorus, four inches and a half from the cardiac orifice, an inch and a half from the greater curvature, and nearly two inches from the lesser. The stomach was slightly ecchymosed by sanguineous infiltration, to the extent of about three inches in length, and an inch and a half in width; it contained about six ounces of a greenish fluid. The liver was congested, and of a brown colour; the gall-bladder was large and distended with green bile. The bladder was empty, although the patient had not lately passed water. About the level of the sixth rib a very hard, ovoid, whitish tumour, an inch and a sixth in length, and nearly an inch in circumference, was found in the œsophagus; through it the left pneumogastric nerve passed, being slightly dilated on entering and escaping from the tumour. The œsophagus was so blocked up that a stylet of the eighth of an inch in diameter could scarcely be forced through it. The tumour, when cut into, was whitish, lardaceous, and grated under the knife; the mucous membrane was puckered, adherent, and pierced with small apertures, from which escaped a quantity of a sebaceous-looking fluid. The tumour pre-

sented all the elements of epithelial cancer of the lips. From the result of this case M. Sédillot deduces the two following propositions as regards this operation:

First: that the stomach should be kept in close contact with the abdominal parietes, so as to induce adhesions at once between the opposed surfaces of the peritoneum. With this view he suggests the necessity of using a few sutures, in addition to the mechanical effect of the canula. Secondly: that during the first day nothing whatsoever should be injected into the stomach; and, during the second day, only a small quantity of water, with the view of restoring the functions of the stomach gradually.—*Archives Générales de Médecine, December, 1849.*

[The results of this case, described by M. Sédillot, are sufficient, we think, to deter surgeons from having recourse to his operation of gastrotomy. It is applicable to very few cases, except those in which organic disease is present in the œsophagus, and in such the operation, even if successful, could only prolong the patient's sufferings until the disease spread to neighbouring parts.]

Foreign Body in the Rectum, requiring the Operation of Gastrotomy for its Removal. By M. REALI.

UNDER the designation of a "very extraordinary case," the author relates the really strange history of a peasant, aged 40 years, who, *in order to diminish the expense of his maintenance*, conceived the idea of closing the anal orifice. He consequently selected a piece of wood, irregularly cut, a little blunted at the point, and notched towards its base, by means of a pruning-knife, obliquely from below upwards, and from without inwards. It was about eight inches long, and from three to four inches in circumference at the base. The simple fellow introduced the foreign body so deeply into the rectum that he could not withdraw it, and after having suffered extreme agony for nine days, he was removed, on the 18th December, 1848, to the Orvieto Hospital, more dead than alive.

Signor Reali, who examined him on his admission, introduced his index finger in its entire length up the rectum, but could not reach the piece of wood, so far had it been pushed up. As it was impossible to extract the plug by the natural passage, Signor Reali saw no other means of saving his life except by performing the operation of gastrotomy; for the points presented by the extremity of the wooden plug, as also the serratures on it, and the spasmodic obstruction offered by the rectum, prevented its descent. He then cut into the abdomen and introduced his hand, but before deciding upon opening the intestine, he tried once more, by pressing on the foreign body, to force its exit through the passage by which it had been introduced; this attempt having failed, he was obliged to cut the intestine and to extract the piece of wood through the opening.

The operation was terminated by re-uniting the intestine, and

subsequently the abdominal parietes, by suture. The case resulted in perfect recovery, *to the applause and ecstasy of all the beholders*, as the Italian text informs us.

In commenting on this singular, but scarcely credible case, which is reported in the *Correspondenza Scientifica in Roma*, the editor of the *Gazette Médicale de Paris* remarks: "We would willingly add our approbation to that of the spectators, if it were demonstrated to us, that no other mode remained of extracting the foreign body by the natural passages. Unfortunately the author only introduced his fingers, and does not appear to have thought of seizing the piece of wood with a lithotrity forceps. It seems to us impossible that, properly handled and managed with perseverance, a lithoclast should not have succeeded in reaching, securing, and extracting the plug. Nor could the oblique notches, with which the piece of wood had been serrated, have opposed a serious opposition to the attempts to extract downwards. The expedient of a protecting tube introduced between the rectal surface and the rugous foreign body, in order to facilitate the passage of the latter, is doubtless as well known in Italy as in France.—*Gazette Médicale de Paris*, November 17, 1849.

On the Diagnosis of Compression of the Recurrent laryngeal, and Pneumogastric Nerves. By M. LEGROUX.

THE recurrent nerve, says M. Legroux, is the exciting nerve of the muscles of the larynx, with the exception of the crico-thyroid, which receives its nervous influence from the superior laryngeal. The muscles of the pharynx, of the œsophagus, and of the trachea, and also the heart, are likewise to a certain extent dependent on this nerve, through the filaments which it sends to them. The lungs, the muscular fibres of the bronchi, the heart, and the stomach, are more or less subordinate to the pneumogastric nerve, the exciting agent of sensibility and of muscular motion. Its function is double, while that of the recurrent is almost exclusively motor. Lesion, section, or compression of these nerves, gives rise to a series of symptoms in relation with their physiological endowment. Nevertheless their alterations have always been confounded with various diseases of the larynx,—phthisis, croup, tracheal phthisis, &c. To remove these morbid alterations from the domain of physiologico-anatomical facts, in order to elevate them to the rank of pathological changes accessible to diagnosis, is the object of M. Legroux's observations.

The alterations of the pneumogastric and laryngeal nerves, pointed out in some incomplete observations scattered through various scientific periodicals, and in four detailed observations by the author of the memoir, are the following: 1st, physical lesions, the effects of which upon the vocal apparatus have been indicated by Galen; 2nd, the development of small tumours in the substance of the nerve, which is rare; and, 3rd, compression, distention, atrophy, destruction to an extent more or less considerable, and

adhesions to tumours by means of a fibrous tissue in which the nerve seems to be confounded. The compressing tumours may be either the hypertrophied thyroid gland, or bundles of tuberculous ganglia developed in its course; but more frequently an aneurismal tumour of the right subclavian artery, or of the arch of the aorta, both of which press on the nerve in the curve formed by the recurrent of their respective side.

The symptomatology of lesion of the recurrent nerve consists in local phenomena and functional derangements. The former depend on the compression exercised on this nerve and the neighbouring organs, and consist in a feeling of restraint, of uneasiness, or of oppression, never of neuralgic pains. The latter depend on the paralysis of the muscles of the larynx, at the side corresponding to the lesion of the nerve. From this paralysis, a subsidence of the aryteno-epiglottidean ligament on the glottis, and the diminution by one-half of the orifice, result; and, in consequence of this fact, we observe a disturbance of phonation, and other symptoms, on which it is necessary to dwell shortly. 1st. The weakened voice can be raised only by an extraordinary effort of expiration, without which it is feeble, and when raised it is hoarse. 2nd. The movements of inspiration and of expiration give rise to a sound of laryngeal rustling (*frôlement*), analogous to that which the motion of a moveable growth would produce, and more or less similar to that caused by a polypus in the nasal fossæ.

Incomplete aphonia, hoarseness of the voice, and a laryngeal murmur, are, then, the three phenomena which are consequent on lesion of the recurrent nerve. But these phenomena, if the author has not been deceived in his judgment, offer furthermore a special character, which, if it is not pathognomonic, at least directs attention to the nerve. This is the *unilaterality* of the voice, opposed to the unilaterality of the rustling sound. The former seems to be produced only on one side; it is incomplete, and cracked (*boiteuse*). The rustling likewise appears to proceed from but one side, so much so that in the first patient observed by the author, and in whom a polypus of the larynx had been diagnosed, the seat of this growth had been assigned to the paralysed side of the larynx. If, nevertheless, this character were wanting, we should always have as guides, aphonia, hoarseness, and rustling. This latter phenomenon might even be absent. The aphonia alone ought to introduce into the question of the diagnosis the possibility of lesion of the recurrent nerve. A less immediate, but not less necessary consequence of lesion of the recurrent, is dyspnœa. The column of inspired air, diminished by half, becomes insufficient for respiration; hence an habitual dyspnœa, which becomes exacerbated in paroxysms,—in asthmatic attacks, like those which are observed in œdematous angina. However, the patients do not complain of any pain in the larynx, occasionally only of a tickling sensation; the air appears to traverse this passage with freedom. An ordinarily intense bronchitis, more marked on the side of the affected nerve, accompanies the dyspnœa.

The simultaneous lesion of the two laryngeal nerves is still in the class of incomplete observations. This lesion cannot be sufficiently complete to determine a general paralysis of the laryngeal muscles, for then death would be immediate. The compression of the two recurrents by a cervical tumour ought to produce effects analogous to those which have been just pointed out, with the modifications gradually induced in them by the increasing paralysis, and probably more marked on one side than on the other.

The simultaneous or isolated alteration of the pneumogastric nerve, below the origin of the recurrent, whatever may be its cause, does not appear to be attended by the acute pains which accompany lesion of the external nerves of sensation; a proof that the sensibility of which it is the conductor is modified by the uses of this nerve.

Observation furnishes but few data respecting the alteration of the cardiac and pulmonary functions which seems to be the consequence of the lesion; vomiting appears to have been observed in the cases of lesion of the left pneumogastric, in consequence of the contractions of the pyloric extremity of the stomach on its paralysed cardiac part.

The diagnosis of lesion of the recurrent nerve is based then on the triple consideration,—1st, of the laryngeal phenomena; 2nd, of the absence of morbid lesions in this organ; 3rd, of the presence in the course of this nerve of a tumour capable of compressing it. In a surgical point of view the seat and direction of a wound will serve as a guide in the investigation of the causes of a traumatic aphonia.

If the tumour be external, if it be a goître, masses of cervical glands, or, above all, an aneurism of the right subclavian, as M. Isidore Bourdon has observed, the diagnosis becomes sufficiently easy: it is sufficient to establish the relation of the tumour with the recurrent nerve. But if the tumour has its seat in the chest it will be almost certainly confounded with an affection of the larynx. This has hitherto always happened. The author referred to then reported his first case, in which the diagnosis had been pointed out in a manner almost mathematical.

M. Legroux lays down the following rules as the future grounds of diagnosis: 1st, to ascertain the presence of the aphonia, the hoarseness, the rustling, &c.; and if they are present, the unilaterality of these phenomena; 2nd, to determine by examination the condition of the larynx externally, to inspect the throat, to examine by the touch the superior opening of the glottis, and to ascertain thereby the integrity of the larynx, the absence of inflammation, of alteration of the cartilages, of œdematous swelling, &c.; 3rd, and lastly, the question remains to be solved, namely, the presence of a tumour in the course of one of the recurrents. Aneurism of the arch of the aorta being the most common, it is to the upper part of the left side of the chest, below the internal extremity of the clavicle, that we must direct our investigations with the view of establishing its existence. If the aneurismal dilatation be directed backwards, we ought to look for it towards the internal postero-superior part of the cavity, if

we have failed to discover it anteriorly and superiorly. These three facts established, the diagnosis follows with certainty; for the expansion of the arch of the aorta cannot take place without distending the recurrent nerve which passes round it. An altered condition of the par vagum may be inferred if repeated vomitings accompany these symptoms.—*Archives Générales de Médecine*, December, 1849.

Case of rapid Decomposition of the human Body; with Remarks on Putrefaction, and the alleged Effects of Lime in accelerating that Process. By ALFRED SWAINE TAYLOR, M.D., F.R.S., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital.

THE anomalies to which the process of putrefaction in the dead body is exposed are well known to medical jurists. In some instances a body will remain for many days without any change taking place in it; in other cases the chemical changes due to putrefaction, or the resolution of the organic into inorganic compounds, are manifested in a few hours. In cases of retarded putrefaction a belief generally arises that the person is not dead, but in a trance. The fact, however, is, that the body merely resists, for a longer time than usual, those changes which every dead human body must sooner or later undergo(*a*). Cases of rapid putrefaction are not uncommon, and are particularly observed, *cæteris paribus*, in the bodies of those individuals who have died from debilitating diseases, or whose sanguineous systems are remarkably full of blood. It is not improbable that at the time of death the blood in such subjects is in a highly diseased condition.

The following case recently occurred in Guy's Hospital; the report has been drawn up for me by Mr. A. G. Osborne, an intelligent pupil who is now attending the lectures at Guy's Hospital.

"Richard Ball, æt. 39, employed as porter in the brewing establishment of Barclay and Co. for many years past, residing in No. 21, Russell-place, Bedford-street, Great Guilford-street. Habits very intemperate; drank porter to excess, and did not refrain from spirits also. About five years since he broke his leg, and for two months was under Mr. Cooper's care in the hospital; and his health may be judged of by the fact that Mr. Cooper thought proper to allow him two or three pints of porter daily during that time. On account of the weakness of the limb he was admitted twice or three times between his discharge and the present time. He is described on his re-admission (Oct. 24th, 1849), as a stout, fat man, with pale complexion, and with the general tissues of his body flabby. For twelve months past it seems he has had a cough, much aggravated of late; and about a week since he first observed blood in the sputa, which has continued at intervals since.

"He is very feeble; pulse weak; bowels regular. No albumen in

(*a*) Some remarks on this subject will be found at the end of this paper.

the urine. Distinct murmur over the left side of the sternum, but whether with first or second sound could not be ascertained. The nurse states that she did not observe his perspiration more than ordinarily disagreeable; and, if it had been so, she thinks she must have observed it.

"On account of the dyspnoea and debility, Dr. Barlow ordered cupping and other remedies.

"Oct. 25th.—Much the same. Towards evening his breathing became more distressed; and at half-past ten o'clock P.M. he suddenly expired, his general symptoms during the day not having indicated immediate danger. The body remained in the ward through the night until eight the following morning, the temperature varying from 60° to 65°. Decomposition had set in unusually early, as even then, although little more than *nine* hours had elapsed, there were large bullæ, filled with sanguineous fluid, on the left side of the body; and by half-past two P.M. on the 26th,—*i. e.* sixteen hours after death,—the corpse presented a most extraordinary appearance. The entire surface was more or less discoloured, blue or purple; the eyelids were bulged forward; the nostrils were filled with bloody froth, through which continued to issue minute bubbles of gas. The abdomen was tense from excessive distention, as a result of gaseous putrefaction; and the skin of the scrotum as tight as any artificial means could have made it. The groins, particularly the right, looked as though putrefaction had begun on parts much bruised during life, and very minute blood-vesicles appeared on the skin in several places. On puncturing the skin of the scrotum, a jet of carburetted hydrogen was emitted, which burnt steadily for above a minute, and the same took place wherever a puncture was made in the legs and abdomen. The highly offensive state of the body precluded a *post-mortem* examination, which was not considered necessary."

Mr. Osborne requested me to see the body, *seventeen hours* after death. The process of putrefaction had still further advanced. The whole of the skin was tense; that covering the neck and face was so distended that the identification of the deceased from the features could not have been made. The skin was covered throughout its whole extent, with blue, green, and livid red patches, and in some places phlyctenæ had been formed, and the cuticle had become removed. In fact, the appearance of the body was such as it is only common to find after the lapse of two or three days in hot summer weather, and after six or seven days when the thermometer is neither unusually high nor low. The state of the body corresponded precisely to what M. Devergie has described as the fourth or last period of change after dissolution(*a*), and this, from his observations made on the dead bodies deposited at the Morgue, he fixes at from six to twelve days after death. I think most medical practitioners, if they had been required in this case to express an opinion of the time which had elapsed since death, would, from the putrefied state

(a) See Lectures in Medical Gazette, vol. xxxviii. p. 186.

of the body, have referred it at least to an antecedent period of five or six days, considering the season of the year. The whole of these changes had, however, taken place in *seventeen* hours from the time of death. Such a case of course conveys great caution in forming a medical opinion(a).

The gases, which issued in jets from every part of the skin which was pierced, were highly offensive. When a flame was applied to the puncture the gas burned suddenly with almost explosive violence. The flame which issued from the aperture was like that of the proto-carburetted hydrogen. The stream of gas did not discolour a slip of paper moistened with acetate of lead, nor did it produce any change on paper dipped in nitrate of silver. Hence it was unmixed with sulphuretted or phosphuretted hydrogen. The carburetted hydrogen was combined with other gaseous products of putrefaction, the nature of which has not yet been determined.

The cause of this rapid access of putrefaction in the body of an individual dying in the prime of life, and at a season of the year when the process is considered to be slow in its appearance, may be assigned to two circumstances:—1st, to its having been exposed soon after death to an atmosphere at about the temperature of 65° ; and 2nd, to a morbid or diseased condition of the solids and fluids of the body, which may have rendered them more readily susceptible of chemical changes. The intemperate habits of this man, and the excessive quantity of alcoholic liquors which he drank, may have tended to produce changes in the condition of the blood and fluids which would render them easily liable to decomposition (other circumstances being favourable) so soon as the breath had left the body. The exposure to the temperature of 65° ceased when the body was removed from the ward,—*i. e.* in less than ten hours after death,—but putrefaction had then already commenced; and it is well known that, when this process has once begun, it continues to spread with great rapidity, even when the conditions of exposure subsequently are less favourable to its continuance.

In this case the whole history is known; but in regard to the bodies of persons found murdered, the facts which are necessary to form a correct judgment cannot, of course, be ascertained. Let us suppose that a body in such a state had been found buried beneath the floor of a room, and a medical man had been asked to assign the period of death,—he might, from common experience in such matters, have declared it to be impossible that the body could have been living within *twenty-four hours* of the time of its discovery; and suspicion might be thus removed from persons really guilty of murder, because it could perhaps be clearly proved that they had not been in or near the premises until within a day of the discovery of the body. An innocent person, seen in company with the deceased five or six days before, might, on the other hand, be unjustly suspected of having been accessory to his death.

(a) See Lectures in Medical Gazette, vol. xxxvii. p. 1065.

This supposed case is not taken for the purpose of throwing doubt upon medical opinions, but to suggest great caution in forming them.

The causes of putrefaction, and the circumstances which accelerate or retard its appearance after death, have not yet been sufficiently investigated, and they are therefore but very imperfectly understood. I have elsewhere published^(a) several cases which show that questions of vital importance to accused persons often depend on a knowledge of this subject on the part of the medical witnesses examined. The evidence of non-medical witnesses in reference to putrefaction can never be safely admitted; and yet, in Courts of law, questions are sometimes put to them on the rapid or slow access of putrefaction, and their answers, given of course at random, are made use of, if apparently available, by counsel for the prosecution or defence.

An instance of this kind occurred at the trial of a woman named Geering, at the Lewes Summer Assizes, 1849, for the murder of her husband by poison. The deceased, Richard Geering, died on the 13th September, 1848, and his body was examined, by order of the coroner, on Friday, April 27, 1849, after an interment of rather more than seven months. As usual in cases of arsenical poisoning, the body was, on the whole, well preserved. The abdominal viscera were certainly in a remarkable state of preservation; and that arsenic was the cause of death was rendered clear by chemical and pathological evidence. The substance of the heart was quite firm, and arsenic was found in it. Mr. Ticehurst, of Hastings, who referred the case to me, observed that, when the body was removed from the coffin, the face and upper parts were very much decomposed.

In the defence it was suggested that the preservation of the body was to be accounted for by the fact that, when the deceased was buried, a slab of wood was placed immediately above the coffin to keep the earth from it; and the village undertaker, who deposed to this fact, said, in answer to a question put by counsel for the prisoner, that this would have the effect of preserving the body for a longer period. It need hardly be observed that a slab of wood could have no such influence on the process of putrefaction as that which was here suggested; and as only that part of the body was preserved in which the arsenic was discovered, it is clear that this substance must have been the real cause of the preservation of the abdominal viscera.

Effects of Lime on Putrefaction.—There are some substances which, it is well known, have a tendency to prevent putrefaction; while, on the other hand, there is one which, by popular repute, possesses the extraordinary power of accelerating this process. The substance to which this property is assigned is *lime*. At the recent trial of the Mannings, one of the medical witnesses is reported to have said that he had no doubt, when he saw the body of the deceased O'Connor,

(a) Lectures in Medical Gazette, vol. xxxviii. p. 184.

it must have been under the ground for a week at least. He formed this opinion from the state of extensive decomposition in which he found it. The examination, as reported in the daily journals, then proceeded:

“ Q.—In forming your judgment, did you take into consideration the fact that *lime* had been used?

“ A.—I did; the lime would certainly cause the body to decompose quicker.

“ Q.—Taking into consideration the quantity of lime used, can you still form an opinion as to whether the body had been under ground for a week or less?

“ A.—I have no doubt whatever that it was there for a week.

“ Q.—Would not the effect of lime be to disfigure the features very much?

“ A.—Yes; and a stranger might not be able to trace them.

“ Q.—Would the external application of lime make any difference with respect to the decomposition of the brain, which was found in a fluid state?

“ A.—The lime might be absorbed through the fractures of the skull, and so cause the decomposition of the brain.”

The medical opinion in this case, respecting the period during which the deceased had been dead, was fully confirmed by general and circumstantial evidence. There was nothing to impugn its correctness. The only question is, whether effects were not here attributed to the use of lime which were really due to the natural process of decomposition. It is said that the prisoners procured the lime in a fresh-burned state, and slaked it over the body of the deceased. The substance would in this case act by the *heat* evolved, the effect of which would be again counteracted by the use of much water and the speedy covering of the body with earth. I have been informed that so much water was employed that the lime was found quite in a plastery state; and there was no evidence of the marks of burning, as a result of the use of lime, on any part of the skin.

The case related at the commencement of this paper shows that putrefaction may take place very rapidly where *lime has not been used*; and it becomes therefore necessary to inquire whether this substance really possesses any influence whatever in accelerating or modifying the process. Some years since, the body of a child in a case of suspected infanticide was brought to me for examination. It had been placed in a box, and covered with lime. The body, considering the period of death and the season of the year, was in a better state of preservation than might have been expected. The abdomen and lower extremities, which had been completely covered with powdered lime, were very well preserved. There was certainly nothing to show that in this case the lime had had any influence whatever on the process.

I am unable to find, in any work relating to the signs of death, facts which tend to bear out the popular belief that lime accelerates putrefaction. By the strong affinity of this alkali for water, as well as by its chemical power of fixing carbonic acid, sulphuretted hydro-

gen, and other animal effluvia, it is admirably adapted to prevent the escape of these effluvia from a putrefying corpse; and, when placed in a coffin or a grave, it will then to a certain extent exert a beneficial influence.

On the unbroken human skin, powdered lime appears to have no corrosive or chemical action whatever. It is the least soluble of all the alkalis, excepting magnesia. A stiff cream of lime possesses no corrosive properties on the skin, while solutions of potash, soda, and ammonia, even when considerably diluted, rapidly dissolve it. Potash and soda, however, by this well-known action on animal matter, do not accelerate putrefaction; they merely act chemically by combining with and dissolving the tissues: and, were lime more soluble than it is, it would probably soften and dissolve the soft parts of the body(*a*).

The following experiment shows what its influence is on the raw flesh of a recently dead animal. Two pieces of beef, the one (*A*) covered with powdered lime which had become partially slaked by exposure to air, and the other (*B*) left uncovered in its raw state, were exposed to the air of an apartment at a temperature of about 55° for fourteen days. In the course of four days the uncovered piece of beef (*B*) was very offensive from putrefaction. The piece which had been covered with lime (*A*) had also undergone decomposition, but the effluvia had been so retained by the lime that no odour was perceptible except within a few inches. The uncovered beef (*B*) at the end of a fortnight had become somewhat dry on the surface, from evaporation, but it was much putrefied, and very offensive. The piece covered with lime (*A*) remained soft, and quite firm in the fibre; it had an offensive smell at a short distance, modified evidently by the action of the lime, but there was no appearance of corrosion, no chemical softening of structure, nor any change of condition to indicate that putrefaction had been at all accelerated or even modified in it. When closely examined, the external surface had acquired a greenish colour, but this was apparently due to the chemical effect of the alkali on the hæmatosine(*b*).

This green colour was found to be only superficial; for within, the muscular fibre had a dark-red brown colour, like that of the uncovered beef (*B*). After the lapse of three weeks, *B* had become much reduced in bulk by evaporation, while *A*, the beef covered with lime, still remained soft, and retained all the toughness of fibre peculiar to it. There was not the least sign of corrosion, or of any chemical action, excepting the slight superficial change of colour above ad-

(*a*) Lime is largely used in the cleansing of skins for tanning: it has no chemical or corrosive action on them, but merely serves to combine with and remove the fat.

(*b*) The green colour of the skin and muscles during putrefaction is, probably, owing to the evolution of ammonia and the action of this alkali in a nascent state on the red colouring matter of the blood contained in the minute vessels. It appears first on the skin of the abdomen, probably from the decomposition of the contents of the intestines, and is one of the most striking signs of real death.

verted to. At the end of five weeks both pieces had become perfectly dried, as a result of evaporation, and putrefaction had become entirely arrested. The piece A, which had been covered with lime, was as hard and firm as a piece of wood, and broke with a brittle fracture. The piece B retained a certain degree of toughness. There was no loss in either, except that which had arisen from mere evaporation and shrinking.

Judging from the result of this experiment, although lime cannot be said to retard, there is no proof that it accelerates or even modifies the process of putrefaction. With the exception of changing the colour of the blood to green in parts denuded of skin, it appears to exert no other influence on the process than that produced by chalk, clay, or any other insoluble powder, laid over dead animal matter: it cuts off to a certain extent the access of air, and, if used in a very thick layer, it would thereby rather tend to retard than to quicken putrefaction. It prevents evaporation for a certain period, so that the animal matter remains soft for a longer time; but, in the end, the water is absorbed, and the animal substance becomes hard, dry, brittle, and imputrescible.

It appears to me that there is an entire want of evidence that lime under any circumstance quickens putrefaction. This process is essentially dependent on *heat*, *moisture*, and *air*, and according to the presence or absence of these conditions, so is the process rapid or slow. The three conditions must co-operate, or putrefaction will be arrested. Thus a *temperature* of 32° or of 212° puts an end to the process. As to the effect of *moisture*, I have found that albumen,—a substance which putrefies in a few hours,—may, when deprived of its moisture by chloride of calcium, be kept without any change for twenty years exposed to the air at the most favourable temperature for putrefaction. The effect of *air* is entirely due to oxygen. In an experiment performed some years ago, a piece of beef was perfectly preserved for *two hundred and sixty-four* days, through all changes of temperature during this long period, without putrefying. This was effected by merely suspending it in a bell-jar containing deutoxide of nitrogen gas, which, as it is well known, acts by preventing the access of oxygen.

The popular idea that lime quickens putrefaction has probably arisen from the supposition that it was used with this view in coffins and graves. Its action, however, is really that of preventing the diffusion of noxious effluvia; and, for this purpose, by its rapid combination with carbonic acid, sulphuretted hydrogen, phosphuretted hydrogen, and animal effluvia generally, it is admirably adapted. In an experiment recently performed, it was ascertained that a drachm and a half of slaked lime removed in ten minutes the whole of the sulphuretted hydrogen and carbonic acid from forty ounces of foul sewer water, which before the addition of the alkali evolved sulphuretted hydrogen in large quantity. In this respect it was found to be much superior to the chloride of zinc, which at the best can only remove a part of the sulphuretted hydrogen, and does not at all affect the other offensive effluvia.

Lime will be found a very cheap, safe, and useful deodorizer. Its value as such does not appear to be sufficiently known.

Retarded Putrefaction, apparent Death, and premature Interment.—Although it is not my object in this paper to consider the question of *retarded putrefaction*, I may here advert to the strange superstitions to which this condition of the dead body has given rise. During the late fatal prevalence of cholera several cases of retarded putrefaction occurred, and produced some popular excitement in their respective localities, from the dread of premature interment. A remarkable case of this kind occurred at Bristol, in October, 1849, in which a youth died from an attack of cholera in about fourteen hours. After the lapse of forty-eight hours, it is stated that the warmth of the body was perceptibly retained, and there were no signs of putrefaction. This process, however, ultimately manifested itself. It is as difficult to say why, in this and other similar instances, the laws of chemistry should have been so long suspended, as why, in the case described in the paper, they came into premature operation,—the persons having died in the same season of the year, and within a few days of each other.

A wild superstition formerly existed in Eastern Europe, and is said still to prevail in Wallachia, to the effect that the bodies in which putrefaction was thus retarded were nourished and preserved by sucking the blood of the living, and to this the name of *vampyrism* was given. As a mere effect of panic, the prevalence of this popular belief led to numerous deaths: those who died were hastily buried, and the bodies of suspected persons were disinterred, and, if found undecomposed, were staked or burned! Dr. Herbert Mayo, in a remarkable work lately published^(a), although he has shown the absurdity of this superstition, has suggested an explanation, which, however, is likely to excite in many of his readers a fear of premature interment. His conclusion is: "That the bodies which were found in the so-called vampyre-state, instead of being in a new or mystical condition, were simply alive in the common way, or *had been so for some time subsequently to their interment*; that, in short, they were the bodies of persons who had been buried alive, and whose life, where it yet lingered, was finally extinguished through the ignorance and barbarity of those who disinterred them." Such a statement, proceeding from one who has attained a high rank as a physiologist, is certainly calculated to excite our surprise. The cases which the writer quotes refer to the bodies of persons exhumed after having been buried for periods varying from *six to twelve weeks*! Can any physiologist seriously believe that a human body can preserve its vitality when screwed down in a coffin and buried in a grave for a period of six weeks? If not, what is the meaning of such bodies being "simply alive in the common way?" The hypothesis that they had been alive for some time subsequently to interment is equally untenable; for, unless vitality continued to within a few days of exhumation, we should still have to account for the

(a) Letters on the Truths contained in Popular Superstitions.

absence of the signs of putrefaction. Admitting the fact that a person may be suffocated in his coffin, this would not explain why his body should resist the ordinary chemical changes which, sooner or later, invariably follow death. "Death-trance" (according to Dr. H. Mayo) "is, however, a positive status: a period of repose, the duration of which is sometimes definite and predetermined, although unknown. Thus the patient, the term of the death-trance having expired, occasionally suddenly wakes, entirely and at once restored. Oftener, however, the machinery which has been stopped seems to require to be jogged, then it goes on again. The basis of death-trance is *suspension of the action of the heart*, and of *the breathing*, and of *voluntary motion*; generally, likewise, feeling and intelligence, and the vegetative changes in the body, are suspended. With these phenomena is joined loss of external warmth, so that the usual evidence of life is gone."—p. 34. It appears clearly from this statement that the author makes no distinction between life and death. All the phenomena of life may have ceased; and yet, if from any circumstances the decomposition of the body has been retarded, it may be contended that the person is not dead but in a death-trance. Dr. H. Mayo has, it appears to me, overlooked a simple explanation of these cases, which would render the adoption of his hypothesis unnecessary. If, as in the case of the youth at Bristol, there is no tendency to rapid decomposition, and the body be buried within twenty-four or thirty-six hours, it will remain unchanged in the coffin for a considerable period; for by the act of interment it is withdrawn from the air and kept at a cool and uniform temperature. In all interments which take place during the winter season the bodies remain for a long period unchanged in the grave. This would be the vampyre-state of the Wallachians, or the death-trance of Dr. H. Mayo. It is strange that some philosophers will thus pass over simple facts, in order to give a mystical and alarming interpretation to plain natural phenomena; but when it is roundly asserted that the continuance of life in a human body is compatible with arrested circulation and respiration, with a cessation of voluntary motion, feeling, and intelligence, and a loss of (external) warmth, it is only a slight additional step to adopt any hypothesis which partakes of a marvellous character. It is a mere quibble about words: that which Dr. H. Mayo calls death-trance is what is understood as death by all other physiologists. The entire absence of the ordinary signs of life is insufficient, according to Dr. H. Mayo, to prove the absence of life,—a proposition which may be granted in reference to a few hours of time; but it would be unreasonable to adopt the writer's rule, and judge of death by the absence of *one* sign only, instead of taking them in their totality, and in their ordinary sequence. Premature interment is a condition which need not be dreaded in this country, where every necessary precaution is taken even with the corpse of the unclaimed pauper; and it is to be regretted that otherwise well-informed professional men should strive to keep alive a groundless fear in the public mind by their want of attention to the curious exceptions to which experience shows the process of putrefaction to be liable.—*Medical Gazette*, January 4, 1850.

Case of Hernia strangulated within the Abdomen, and remedied by Operation. By JAMES SYME, Esq., Professor of Clinical Surgery, in the University of Edinburgh.

THE reduction into the abdomen of a hernial sac, with its contents in a state of strangulation, is an occurrence so rare in the practice of surgery, that systematic teachers and writers generally seem to regard it as a subject hardly deserving of their notice. Mr. Teale, of Leeds, in his excellent work on hernia, has collected and presented in a tabular view all the cases of this kind which have been recorded by Arnaud, Dupuytren, and, more recently, Mr. Luke, of London, from which it appears that the only instances of an operation performed with success, under such circumstances, in Great Britain, are one recorded by the last-mentioned gentleman, and another by Mr. Wade. I have several times been asked to see patients on the point of sinking under the effects of this "reduction in mass," as it is termed by the French surgeons; and on two occasions have had an opportunity of examining the parts concerned, after death. The stricture caused by the neck of the sac was then so obviously the cause of death, and might have been so easily remedied by incision, that the non-performance of an operation within due time seemed matter of deep regret, and suggested as an imperative duty to operate whenever the grounds of suspicion should warrant this proceeding.

Upon the 13th of October last, I was asked by Mr. Sidey and Dr. Newbigging to see a patient, who appeared to be suffering from an internal strangulation of the bowel. He was a man about fifty years of age, the butler of a family in town; stout in frame, and rather corpulent. For eleven years he had been troubled by an inguinal hernia of the right side, and worn a truss to prevent its protrusion, until the last six weeks, during which he had not observed any swelling, although the bandage had not been used, in consequence of five months having elapsed without any appearance of it. At twelve o'clock of the preceding night he had suddenly felt very ill, and sent for Mr. Sidey, who saw him at one o'clock in the morning, complaining of intense abdominal pain, with quick pulse, cold perspiration, and vomiting. Upon careful examination, a tumour, about the size of a hen's egg, was felt in the right iliac region, without any external enlargement or thickening of the parietes of the cavity. Leeches were applied, and several injections administered during the night, with some palliation, but no material alteration, of the symptoms; which continued much the same as they have been described, until we met about two o'clock in the afternoon, fourteen hours from the commencement of the attack.

As there could be no doubt that strangulation of the bowel existed, we examined the suspected region with all the care in our power, but, probably from the abdomen having become more distended, without being able to detect the tumour which had been felt the night before. All that we could perceive was a slight degree of induration or resistance, opposite the internal ring, over a space

not much larger than the point of a finger. In these circumstances I should not have felt justified in undertaking any operation, unless Mr. Sidey's accuracy of observation had been well known to me, and, in absence of any positive information that could be obtained at the time of our examination, rendered his detection of a tumour in the first instance sufficient ground for surgical interference.

Having placed the patient in a convenient position, I made a free incision of the integuments throughout the whole extent of the inguinal canal, tied the superficial epigastric artery, which had been cut, inserted my finger through the external ring, and, guiding upon it a probe-pointed curved bistoury, divided the aponeurosis of the external oblique, up to the internal opening for the cord. There being still no appearance of a tumour, but a more distinct feeling of resistance, I divided the other coverings of the cord, and brought into view a dark-coloured mass, at the internal ring. Pulling this toward me, I readily drew out a hernial sac, about the size of a hen's egg, which, being opened, was found to contain a portion of the small intestine. Searching for the stricture, I encountered a difficulty from the sac yielding to the slightest pressure, and returning with its contents into the abdomen. I, therefore, seized it with a pair of forceps, and thus obtained the requisite tension, until I succeeded in passing the edge of my nail beyond the stricture, and guiding the bistoury upon it, effected the dilatation necessary for accomplishing reduction of the strangulated part. The patient was speedily relieved from all his distress; and, although a very unfavourable subject for any operation, through the kind and judicious management of Mr. Sidey, recovered completely, and is now quite well.

There seems to be considerable difficulty in satisfactorily accounting for the strangulation. It was evidently caused by the neck of the sac; but whether the hernial pouch had remained empty until the symptoms were produced by the entrance of intestine, or whether the contents had previously been in a state of incarceration, is a question that admits a difference of opinion. Mr. Sidey informs me that, about three weeks before the operation, the patient suffered for two or three days from colic pains, but not of such a character as to suggest the suspicion of hernia; and the stricture was so extremely tight that I can hardly suppose the intestine could have been imprisoned, without affording signs of being so.

This case will, I trust, afford encouragement to operate for the remedy of hernial tumours, reduced in a state of strangulation; and may also be regarded as possessing some interest from being, so far as I know, the only instance of recovery from a hernia which has become strangulated within the abdomen.—*Monthly Journal of Medical Science*, January, 1850.

MEMOIR OF THE LATE SAMUEL SMITH THOMSON,
M. D., OF BELFAST(a).

THE death of Dr. Thomson makes the fourth which has taken place among the physicians of Belfast within the last five years, the social rank and distinguished professional attainments of each of whom greatly adorned and added to the fame and celebrity of the metropolis of Ulster. This list of departed professional excellence, in addition to the subject of this memoir, embraces the names of Dr. M'Donnell(b), Dr. Sanders(c), and Dr. Forsythe(d), all of whom, with the exception of Dr. Sanders, had exceeded man's usually limited pilgrimage here below, of "threescore years and ten." But he was cut down in the very flower of his days, and just as he was making the most rapid strides to professional eminence, having already achieved an almost enviable fame in the sight of his brethren and fellow-citizens: this was well exemplified by the monument(e) erected to his memory, by his medical brethren and public friends, in the new burying-ground, Belfast(f).

Samuel Smith Thomson, whose name is so interwoven with all that is "true, and honest, and just, and lovely, and of good report," that it will not easily be forgotten in the town and neighbourhood of his adoption, was born in Coleraine in May, 1778, and died on the 30th of April, 1849. The immediate cause of his death was bronchitis, to attacks of which he had been very subject for a number of years, but which were always easily removed, until the last, which, notwithstanding the most prompt and energetic treatment, could not be controlled, congestion of the lungs supervening, and a fatal issue being the result, on the fifth day from the period of the

(a) We are indebted for this memoir to Dr. R. Stewart, resident physician of the Belfast District Lunatic Asylum, to which the late Dr. Thomson was for so many years visiting physician.

(b) Died 5th April, 1845, aged 82. (c) Died 26th July, 1846, aged 32.

(d) Died 12th June, 1849, aged 93.

(e) The following is a copy of the inscription on the monumental tablet erected to his memory:

"JAMES MAXWELL SANDERS, M. D.

"Born 24th April, 1814.

"Died 26th July, 1846.

"Erected by a number of his friends, *many of them his professional brethren*, to whom he was greatly endeared by the amiability and benevolence of his disposition, the integrity and purity of his life, the advantages of a liberal education, and the highest professional attainments.

"*The righteous shall be in everlasting remembrance.*"

(f) We cannot avoid adding our testimony to the general loss which the early death of Dr. Sanders was to the profession. His friend and fellow-student, we enjoyed an intimate acquaintance with him for some years, and we can truly say that he was equally endeared to those who then knew him by his gentleness and kindness of disposition, as he was admired for his talents.—

[Ed.]

attack, immediately before which the deceased had been in the full enjoyment of his usual excellent health and spirits.

Dr. Thomson was of the middle stature, and of a full habit of body, but remarkably active in all his movements. He had a more than ordinarily well-developed cerebral organization, a quick, penetrating, intelligent blue eye, florid complexion, and a remarkably kind and benevolent expression of countenance; of great affability and suavity of manner; in truth the finished and polished gentleman, incapable of giving offence, and, if offended, most readily and easily appeased.

His conversational powers were at once varied and of the highest and most agreeable order; his tastes pure and refined; a great, indeed it might be said an enthusiastic lover of music, vocal and instrumental. He was an excellent performer on the violin, having an admirable ear, and regularly enacted his part at the concerts of the Belfast Anacreontic Society, of which he was the founder and president. The Music Hall of Belfast, a very conspicuous and ornamental building, in one of the leading private streets of the town, was erected chiefly through his great and influential exertions.

His father was James Thomson, a highly respectable surgeon and eminent practitioner in Coleraine, county Derry, a man who was naturally gifted with a mind of great power, which was both well cultivated and well balanced. He had ten children, two sons and eight daughters, Samuel Smith being the youngest of the whole family. The eldest child, an unmarried daughter, lived to the advanced age of eighty-eight years, having died about six months since, in Belfast, retaining all her faculties perfect to the last.

The early education of Dr. Thomson was conducted by his father, and finished under the roof of a Presbyterian minister, with whom he resided as a member of the family. His medical studies commenced by his being bound apprentice to his father. In due season he went to Edinburgh, attending regularly at that celebrated university until he had completed his curriculum, when he immediately went in for his examination, obtaining his degree of M. D. in 1800. Shortly after this he came to Belfast, to settle as a private practitioner, where, after remaining for a few years, he went to Magherafelt, in the county of Derry; but soon leaving it, he returned to Belfast in 1805, which he never afterwards left, thus being nearly half a century actively engaged as a practising physician amongst its inhabitants. He was greatly interested in the establishment of the Belfast Fever Hospital, now entitled the General Hospital; and in 1817, when typhus fever broke out so malignantly, and spread so fearfully and fatally, he was night and day in attendance on the suffering poor, not thinking at all of self or of personal risk, but heroically combating with the dire pestilence which was decimating the land; and this so successfully, with such unremitting, such superhuman efforts in fact, that, when the epidemic had ceased, his fellow-citizens presented him with a most complimentary address, accompanied by a splendid service of plate.

During a period of five-and-twenty years, Dr. Thomson continued one of the attending physicians of the above hospital, when, owing to his extensive private engagements, arising from a rapidly increasing practice, he retired with honours not less numerous than deserved; he still, however, remained in official connexion with it as one of its consulting physicians, the duties of which he performed until his death, always taking a warm and lively interest in everything that concerned its welfare and good working, and of which the most ample proof was given by his leaving it a legacy of £100, and this too not more than a couple of hours preceding his dissolution, thus showing how vividly its prosperity was on his mind, and how clear, collected, and benevolent the intellect of this highly gifted and distinguished man was to the very last moment of his honourable and exemplary existence^(a). The only other public medical institution with which Dr. Thomson was professionally connected was the Belfast District Lunatic Asylum, to which he was appointed the visiting physician in 1837, in succession to the late Dr. James M'Donnell, who retired from this office, owing to the infirmities necessarily attendant upon his then very advanced age. This appointment he held until his death, and in what manner, the annexed official document, as published in the local newspapers, will show sufficiently:

“At a meeting of the Governors of the Belfast District Lunatic Asylum, held on Monday, the 7th of May, 1849, the Right Rev. Bishop Denvir in the chair, it was unanimously resolved,—‘That this Board, deeply lamenting the sudden removal of their late visiting Physician, Dr. Samuel Smith Thomson, deem it their duty to record their cordial esteem for his most estimable character as a man, their due appreciation of his distinguished attainments as a medical practitioner, and, above all, their grateful remembrance of his eminently judicious, humane, faithful, and efficient services, during the last twelve years, as the visiting medical officer of this asylum.’”

Before proceeding further with this brief memoir of Dr. Thomson, the relation in which he stood, and the conduct he invariably pursued towards his professional brethren, must be alluded to. And here it may be truly stated, that we come to one of the brightest and purest gems in his character, for if ever there was an upright

(a) At the first meeting of the committee of the hospital after his death, the following resolution was passed:

“That this Committee have heard with the deepest regret the melancholy intelligence of the death of Dr. S. S. Thompson, consulting physician to the Hospital, one of the earliest and most efficient promoters of this charity, to whose interests he so long and so ably devoted the best years of his professional life. As a slight but sincere tribute of respect for his memory, this Committee beg to express, in the most especial manner, their unfeigned sorrow at his sudden removal, and tender their cordial sympathy and condolence to his sorrowing relations.

“(Signed)

ANDREW MULHOLLAND, *Chairman.*”

man, acting with the fullest integrity and singleness of heart and purpose, and uninfluenced by the mean and petty jealousies which unhappily are so rife amongst professional men, that man was Dr. Thomson. His family motto significantly enough was, "Honesty is the best policy," a motto which he handed down to his relations, not merely unsullied, but rendered all the purer and made to shine forth in still more refulgent colours by his whole manner of life, which was pre-eminently that of the "noblest work of God"—an honest man.

From a very early period in his professional life, he stood forth the resolute, vigorous, and uncompromising champion of the rights and privileges, the honour and station, of his brethren. He invariably espoused the cause of the juniors in particular, having never ceased to preach that the medical labourer was worthy of his hire; and he ultimately succeeded, after many years of local battling, and no small animosity and factious opposition, in having the principle carried, that the medical attendants of the General Dispensary in Belfast should be paid regular and fixed salaries. This principle is now fully recognised in Belfast, thanks to Dr. Thomson's exertions for its accomplishment. For his able and distinguished advocacy of his brethren at all times, and his exalted professional conduct generally towards them, he was presented, in 1834, with a massive and splendid gold snuff-box, on which were engraved the names of the donors, thirty-six in number, of all branches of the profession; a gift which the lamented deceased prized, as it may be supposed, in no small degree. Having lately been referring to Dr. Cheyne's very interesting "Autobiographical Sketch," we were forcibly struck with the following extract, as very applicable in many respects to Dr. Thomson:

"I endeavoured to become acquainted with the characters of those who moved in the highest rank in the profession, and to discover the causes of their success; and I ascertained that, although a man might acquire popularity by various means, he could not reckon upon preserving public favour unless he possessed the respect of his own profession; that if he would effectually guard his own interests, he must in the first place attend to the interests of others; hence I was led carefully to study and liberally to construe that part of medical ethics which regulates the conduct of physicians towards each other."—*Essays by John Cheyne, M.D.*, p. 8.

The high opinion held of the late Dr. Cheyne by every branch of the medical profession in Dublin, is perfectly within our own recollection and observation, one and all of whom, junior as well as senior, respected, nay loved him, knowing that he was a man in whom the most implicit confidence could be placed at all times and under all circumstances. Such a man, also, was the late Dr. Thomson, the members of his profession, from the oldest to the youngest, almost venerating him, for his exalted virtues and strict integrity, as shown in all his intercourse with them, to say nothing of the high estimation in which they held his professional talents

and other varied and ennobling acquirements. This confidence in and opinion of Dr. Thomson was never lost by his brethren,—sons, rather, we should say, for he had been for years past, with one consent, the father of the profession in Belfast, and as such his death was felt by the whole profession, who, without an exception, attended his unprecedentedly crowded funeral, walking in the procession as mourners; and in order further to prove their great love and esteem for him, and as only a fitting mark of respect for his memory, and desire to perpetuate it, they, in their capacity as the Medical Society, have resolved that a marble bust of their “beloved and esteemed” chief shall be placed in their library, or in the hall of the general hospital; and further have placed on record their deep regret for his removal from amongst them by passing the following resolution at their meeting on the 7th May, 1849.

“That this Society begs to record its deep sorrow in the lamented decease of Dr. Samuel Smith Thomson, one of its oldest members,—a gentleman at the time of his death holding the distinguished position of head of the medical body here, a place to which he was most justly entitled, not only from his sincerity, but also from his skill, worth, and integrity, and kindness and urbanity to his juniors; and especially from his untiring zeal for, and the unswerving firmness with which he ever upheld the honour and interests of the profession; and that a letter, signed by the Chairman and Secretary, be written to his relatives, expressive of these sentiments, and respectfully offering the condolence and sympathy of this Society on their melancholy bereavement.”

The deceased was very liberal in his charities; his purse-strings were never closed against want or distress in any form, but freely opened to afford relief. The branch of the Medical Benevolent Fund Society established in Belfast in 1843, he supported from the first, and was unanimously elected its perpetual president(a). No practitioner could have been more liberal in giving the benefit of his professional services gratuitously to those whose circumstances were limited; perhaps, indeed, he went to the extreme of liberality in this respect, his benevolence thus being unbounded, and meted out, too, in such a manner as to do away with all embarrassment on the part of the recipients thereof. All praise was his due for this, and he received his reward by enjoying a highly lucrative practice for a number of years; in fact, latterly he was compelled to limit

(a) “Belfast Branch of the Medical Benevolent Fund Society of Ireland. At a quarterly meeting, held in the Library Room of the Medical Society, on Monday, May 7th, 1849, Robert Stephenson, Esq., M.D., in the chair: resolved unanimously, that it is with feelings of the most unfeigned regret we have heard of the death of our late highly-esteemed and respected president, Dr. S. S. Thomson, whose unceasing and disinterested attention to the welfare of the society, since its foundation in 1843, added so justly to the lustre of his character for active benevolence, and true sympathy for the wants of others, and now demands from us the expression of our greatest sorrow and concern for the heavy loss which we have sustained by his sudden removal.”

considerably his professional engagements, so extensive had they become, and only to attend in consultation, except in the case of patients with whom he had been since the days of their youth connected, not merely as medical adviser, but as a counsellor and friend.

Dr. Thomson never published any contribution to medical literature that we are aware of; not but that he had both material and ability to do so in the best and most attractive garb if he had pleased, for not only professionally was Dr. Thomson thoroughly educated and experienced, but he was also an accomplished scholar, with a mind well stored both with classical and general knowledge; he, however, had not the inclination, or rather his modesty prevented him, having not alone an utter aversion to appear in print, but to write anything more in ordinary than he could well avoid.

In politics Dr. Thomson was a Whig, but never appeared in public as a politician, thus evidencing that plain, common-sense wisdom with which he was so largely gifted.

Having now touched, however imperfectly, on some of the chief phases in the remarkably even tenor of a lengthened existence, such as Dr. Thomson's, it only remains to observe, that it was in the family circle, amongst his own immediate relations and intimate friends, that he especially appeared in his true character of kindness and beneficence.

Though Dr. Thomson never married, yet from a very early period he took upon himself all the responsibilities and engagements of a parent, by adopting two nephews, the sons of a deceased sister, both of whom (one being married and having a large family) continued to reside with him till death separated a tie which was made all the more precious and dear from its long and unbroken continuance of unmixed happiness.

The deceased was a truly religious man, a diligent and earnest student of his Bible, and most exemplary as a regular attendant on all the ordinances of public worship. He ever abhorred whatever tended in the most remote degree to put a slight on things sacred, and not less so did he detest hypocrisy in any shape. Living the life he did, he met death with the utmost resignation and composure. Its certain approach he plainly foresaw, having it fully impressed on his mind that he could not recover, owing to the severity of the attack with which, in the providence of God, he had been so suddenly and fatally seized. Speaking on the subject to a dear friend two days before he died, he observed, "I have been long prepared for this, and my trust is entirely on the merits of my Redeemer." To the last moment he continued perfectly conscious and collected, and within a few hours of his dissolution, he, whilst his medical friends were visiting him, recounted over the whole treatment which had been pursued, observing, at the same time, that but for the distress which he suffered in speaking, he felt as fully competent then, as at any period of his life, to discuss any professional question. But we must draw this memoir to a close,

and in doing so we cannot conclude it better than by quoting the following extract from the feeling letter of the chairman (S. Brown, Esq., R. N.) and the Secretary (Æ. Lamont, Esq., F. R. C. S. I.), of the Belfast Medical Society^(a), in officially communicating to the family of the deceased the resolution of that body, on occasion of death of their honoured and much deplored relative.

"In conveying to you the resolution, we feel that we but feebly express the united sentiments of the medical body here when we say, that in the demise of Dr. Thomson, not only has the profession sustained an irreparable loss, but the entire community have reason to deplore the removal of one who was an ornament to society; kind, gentle and unassuming; charitable from innate feelings of benevolence, and generous without ostentation. Long shall the many families of which he was the respected friend and trusted counselor, long shall the various public bodies with which he was connected, and in which he was so highly esteemed, feel that by his death a sad void has occurred in the private and social circle, a vacancy not to be easily filled up in those associations where he was ever active in the cause of charity, or lending himself to promote, in delightful moments of relaxation, that kindly intercourse which softens, improves, and elevates the human heart."

(a) We may here mention that this society has received a valuable addition to their library, through the liberality of Dr. Thomson's executors, as the following letter will show:

"Belfast, 15th September, 1849.

"DEAR SIR,—At the late monthly meeting of the Belfast Medical Society I was directed to acknowledge the receipt of your most liberal and valuable present of books (above 800 volumes), being the medical portion of the late Dr. Thomson's library, and to thank you most sincerely for the kind consideration and generous feeling which prompted you to put in possession of the Society so valuable and appropriate a memorial of one, whom every member of it revered as a parent, and valued as a friend.

"Accept, therefore, dear Sir, the thanks of the Society, cordially and gratefully tendered, and believe me, your's most faithfully,

"Æ. LAMONT, F. R. C. S. I.,

"Secretary.

"To James Bristow, Esq., Belfast."